The Washington Press

THE ALAMEDA COUNTY PRESS

California Associated Farmer Section

FARM SECTION NILES, ALAMEDA CO., CAL., FRIDAY, JULY 10, 1914. FARM SECTION

SCENES ON THE FAMOUS RIVERGARDEN FARMS

Our illustrations give some idea of what is being done on one of California's large subdivisions of agricultural lands.

The top pictures show a bunch of thoroughbred Jersey cows and a hay field with a fine crop in the shock. These are fine agricultural lands, will grow alfalfa and consequently will support dairying in good shape.

The lower pictures are of a ranch in the raw with buildings partly built, to be used as a dairy and hog ranch, the owner making a specialty of Yorkshire hogs; and a sample of volunteer grain on land suitable for deciduous fruits or any garden products.

The subdivision of this big ranch means much for prospective settlers on small places.

The Famous Fair Ranch

A Subdivision of

Rivergarden FARMS

Here is the most remarkable body of river-bottom sediment soil in the State of California.

Until you have seen these thousands of acres of pure silt bordering the Sacramento River for 30 miles you will not realize or appreciate what valuable farms are offered you in the subdivision of these great properties.

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SAN FRANCISCO CAL.

PLANT FOOD IN SEEDS.

Much of the food of very young plants comes from the seeds to which they are attached. To prove this, plant two beans in a tin can containing sandy soil; water and keep in a warm, light place. Soon after the beans push above ground take a sharp-pointed knife and carefully cut off the two half beans without injuring the rest of the plant. Allow the plants to grow for a week or two and note the more rapid development of the plant to which the half beans are attached.

Hardy vegetables may be planted almost any time in California. By sowing a few seeds of cabbage, cauliflower, turnips, carrots, beets etc., every month a succession of fresh vegetables may always be at hand.

Raspberry plants should be set early while still dormant, to get best results but the young plants or sprouts may be dry and planted in May with fair success.

Nasturtiums, portulaca, California poppies and bachelor buttons will do well on almost any soil so long as there is plenty of sunshine.

THE FLOWER GARDEN

PRIZE GARDEN LETTER.

A Letter That Is Worth Reading by Every Boy or Girl Who Wants to Raise a Garden.

By Rosa Drendel in Farm Journal.

IF I were going to do gardening, I'd first select the patch of ground to use and be sure that it contained rich soil. This I would do the fall before I expected to plant it, and at the same time I would have several loads of good fertilizer spread over it. In the spring I'd have it plowed to get the fertilizer well into the ground, then dragged twice to get the ground fine. I would also rake it a few times so as to make the ground ready for seeding. Then I'd decide in which part of the garden I wanted the vegetables and flowers. I would get a patch of ground ready for cabbage, then scatter the seed evenly and cover it over with a little soil. The same for beets, only I'd plant them in rows.

The lettuce, onions and radishes I would sow in rows, because they are easier to keep clean.

Early in the season I'd plant tomatoes in a box in the house, and when they got large enough I would transplant them and put a stick beside each little plant for a support, so the sun could get at it to ripen the tomatoes.

When the beets got about six inches high they would need thining out so they would grow better; and the ones I pulled out I could use for greens. When I planted the peas I would put three or four in a hill, and have strings from one end of the row to the other for the peas to run on, so the plants couldn't lie on the ground and rot.

After the radishes were eaten, the ground would need hoeing up again to plant turnips, because they have to be planted later than some things. If I planted sweet corn I'd plant it in rows, and plant some squash, watermelons or pumpkins among the rows.

I would leave a path between the beds or rows of vegetables, so that I could walk around without injuring the plants, and clean the weeds out. Along the paths I could plant some pansies or geraniums, and sweetpeas along the fence. The beauty of the flowers would help to pass the time

[redacted]

day. Of course, [redacted] only a small part of the work to be done in gardening, but the rest would be mainly keeping it clean until fall, when it would be time to pull up the beets, carrots, cabbage, etc., and put them in the cellar.

FLOWERS ON THE FARM.

Beautiful Surroundings Are Worth All They Cost in Time and Work to the Farm Home.

WHEN the farmer, with up-to-date methods for land cultivation, applies them in beautifying the farm home or yard, he will have done much toward solving the problem of keeping the boys and girls in the country.

There is one way to beautify his grounds that is within the reach of every farmer. That is the planting of flowers.

Fewer Varieties Best—It is better to use good taste in selecting a few standard varieties than to experiment with the rarer but less hardy plants. For the May flower bed or border, the coleus is indispensable. It has no flower, its chief claim to beauty lying in the dark reddish, or vari-colored leaves. The so-called "Joseph's Coat" is another good foliage to use in massed beds. Among hardy bloomers is the canna, with broad, graceful leaf and crimson blossom. The canna bulb may be set out as soon as the frost has left the ground.

In combination with violets, the velvetry pansy presents a scheme of deep rich color. When the violets cease blooming, the foliage salvias can be used as a "fill-in."

If the old-fashioned garden, with its indiscriminate flower massing, is preferred, a host of flowers, dear to our grandmothers, presents itself Hollyhocks, cosmos, larkspur, poppies, perennial phlox, sweet williams, pinks, breathe the very essence of old-fashionedness.

Good Culture Necessary—In order to have success with any flower, two things are necessary, cultivation and a sufficient supply of manure. In extreme hot weather a straw mulch about the roots serves as a good retainer of moisture. There will be very little trouble caused by insects on outdoor plants. In case there is, a prepared tobacco extract serves as a good remedy. Different flowers call for soils of varying richness, but with judicious fertilization, a comparatively rich soil may be obtained. The best fertilizer, well-rotted manure, should be worked into the ground every year after the flowers have ceased blooming.—Kansas Farmer.

GARDENING IN A GRAVEL PIT.

Small Fruits and Vegetables Are Easy to Grow if There Is Plenty of Water Handy.

RICH, ripe red raspberries every morning for breakfast is only one of the products that may be enjoyed by all country people if they have a little space to devote to them. The soil need not be of the best, for with moisture and cultivation they will grow and bear berries in all grades of soil from the lightest sediment to stiff clay or black adobe. One of the most thrifty plantations in evidence is on what was termed some years ago as "too poor and thin for prunes," but water and cultivation has made a profitable berry business on such land.

The Herbert Raspberry—After several years' trial of this variety in the gravel pit and elsewhere it has behaved well all along and is a particularly good berry. Good size, good color, good quality and good bearer are reasons enough for planting at least enough of these for family use.

The everbearing St. Regis alongside of the Herbert takes second place, for in size and quality it is much inferior.

What is the use of planting some second grade fruit in your backyard or in the finest garden to be found, even if the plants or trees are free, when the very best may be raised just as easily? There is really no excuse for being without fresh fruit in this glorious climate unless one is willing to admit that he is lazy. Laziness would have a sorry time trying to make a living in the gravel pit or any similar situation where mining must be resorted to to remove from one to five feet of gravel before any crops can be grown successfully.

Strawberry Bed—We planted [redacted] varieties of Ettersburg strawberry plants rather late and have neglected them too much, but they have made a fine growth and have produced some berries and promise more soon.

Of all the gardening arts, raising strawberries must be about the most difficult for the average gardener. Strawberries will not stand neglect, that is sure. They must have good soil and almost a constant supply of moisture and cultivation to keep them in proper condition to bloom and bear fruit. Also, the runners must be kept off if a good crop of berries is expected. We hope to have a better report of the berry patch in the fall.

Yellow Turnips—Of the easy-to-grow vegetables perhaps none are easier than turnips and none will stand more neglect. The patch of radishes, turnips and lettuce is about past its usefulness at this time—June 10th—and will have to be resown if we are to have these vegetables at their best. By the way, the month ending June 15 is an ideal time to plant many varieties of garden seeds for the late summer supply of vegetables. Tomato plants, if well grown, do fine if planted the forepart of June.

Squash of all kinds are better planted in June than April. We have followed this practice for many years and find it very satisfactory. Field squashes, like the marrowfat, for instance, will not set during the hottest weather, so there is no advantage in early planting. Besides, early planted squashes are almost sure to be eaten up by the big black squash bug—a catastrophe to be avoided.

Flooding the Garden—Our problem in June is to bring the big stream of water from the pump on the high bank down into the garden. It is lively and exciting work sometimes, for the soil is sandy and ditches are likely to break and send the whole stream into the deepest part of the gravel pit. However, by starting and stopping the motor at short intervals we manage to get the water in the right place.

Some day we hope to replace this primitive method for concrete pipes and perhaps some nice easy-to-operate valves.

There is nothing, though, that makes the corn and beans grow more rapidly than plenty of water in the summer time.

If you grow vegetables for a local market, plant only those of best quality, even though the yield is not quite as great as that of an inferior kind. Quality will pay in the end.

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California Associated Farmer

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The Editor of the Farmer invites correspondence from any reader upon any subject that may interest country people, or have a bearing upon improvement of conditions in rural life.

All departments of this paper are open for the approval or disapproval of its readers and a free expression of opinion is invited.

Address all Communications to
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21 W. Santa Clara Street,
San Jose, California.

FARM CREDITS

More To Be Desired Than Low Rates of Interest Is a Liberal Education Upon the Subject of Borrowing Money.

CREDIT is a most alluring as well as most misleading of all words to many people, perhaps to a majority of people.

This is particularly true of young people who are starting out in life to make a home and a fortune, and what can be more pleasing and [illegible] is self-satisfying than to be [illegible] a the back and assured that "your credit is good."

To be able to enter into a home or take possession of a farm by paying down a small part of its worth is really a wonderful experience to the uninitiated and most misleading in results. It works upon the same principle, only on a larger scale, as the almost universal "installment plan" in the purchase of the smaller things that people need or think that they need.

Advice From Department of Agriculture—Elsewhere in this issue will be found some good advice coming from the department of agriculture as an extract from Bulletin No. 593, in which are set forth five rules for borrowing money. The three most important are commented upon in this extract, but all are considered in the bulletin and are worth reading by any farmer who is in need of money or thinks that he is.

From a reading of this extract and some knowledge of the rules of business one may readily see that any plan which may finally be agreed upon by congress to loan money to farmers, than whom no other class or profession should be more favored, will carry with it necessarily absolute protection to the government as to principal and interest of the loan.

The Reduced Rate of Interest—A great deal of oratory and theorizing have been unloaded to willing audiences of farmers, in which they keynote has been "a low rate of interest." This has been a most pleasing tune and has without doubt created the greater part of the interest in farm credits which has been aroused. It is practically agreed that a saving of 2 per cent from exisiting interest rates is about all that can be hoped for, and possibly the eliminating of brokerage fees and delays in making a loan after it has been ascertained that the necessary conditions are present in the property to be purchased or improved and the individual who is to handle the money. This latter requirement will necessarily have to be complete or the loan should not be made both for the good of the individual and the government.

And here lies the kernel of the whole subject of farm credits. Is the person applying for a loan equipped in proper training of mind and body for carrying to a successful issue the provisions of a loan?

What Qualifications Are Necessary?—It would seem fair to conclude that a young man wishing to borrow money to buy a farm should first of all present his credentials as a farmer. Does he understand the principles of plant growth and the conditions that are required to produce a crop, and, quite as important, can he plow and sow and cultivate and harvest the crops that this land, through his management, may produce?

The degree of excellence to which he has attained in practical farming is more important to him and to the government than the rate of interest, which may not vary more than 2 per cent from the present commercial rates. It seems needless to enumerate elements of character, but that he must be industrious, active, without bad habits and as clean a bill of health as a life insurance company would require would seem reasonable.

Some Other Conditions—When all of the foregoing requirements are present there are still others that should be created before farm credits will be the safest class of credits, and command the lowest rate of interest, and the most important is the surety that he may obain a fair price for his products.

The farmer the country over is now reputed to receive for his crops 35 cents of the dollar that is paid to the handlers by the consumer. This is a condition that on the face of it is not a fair one to either producer or consumer. Considering the farmer's interest alone, suppose instead of receiving 35 cents of the consumer's dollar he should receive 50 cents. This would solve the question of interest at once and make the payments on principal much easier.

What Can We Do?—Considering the young men only, should their education not include, besides the usual [illegible] is a [illegible] of selling.

It would seem that co-operative organizations have not obtained for him in the past the 50 cents that he should have, and there is no immediate prospect of their doing so. It also seems that combinations will not do the work.

It would also seem that the middlemen will not of their own volition take a smaller percentage for handling the crops.

Possibly if producer and consumer could be induced to see the situation alike a change might be made.

In that event, farm credits would not only be the best obtainable security, but the rate would be of little consequence to the borrower.

Which Dairy Breed—Regardless of world's champions or any other dairy test the best breed for the prospective dairyman to choose will depend quite as much on the market where he must dispose of his dairy products as upon the breed.

Buy Bulbs Now—Orders for bulbs for fall planting should be sent in as soon as possible and the preparations for planting made as opportunity offers. The early planted daffodils, hyacinths and tulips always produce the finest flowers in the spring.

Farmers' Short Courses—The annual announcement of farmers' short courses at the university farm at Davis is printed and should be in the hands of every farmer who contemplates taking advantage of these excellent opportunities to become better acquainted with the principles of agriculture that he may become each year a better farmer. Write to the state university at Berkeley for a copy.

Improve Textbooks—It has been suggested that some of the text matter in the books used in rural schools should treat of the principles of plant growth, beauties of nature and possibilities of a country life. At the present time the common school textbooks would not give anyone an inkling that there were such occupations as farming, fruitgrowing or any other method of getting a home from the soil. It would seem that he who would compile a series of books in which natural life from its simplest forms up would be suitably treated for all grades would be doing a lasting service to country children and to agriculture.

THE HAY SITUATION.

During the Season of Very Low Prices the Crop of Hay Should Not Be Allowed to Leave the Ranch.

CONTRARY to the belief of many farmers and consumers as well that hay would never again be below $10 per ton in the Santa Clara valley, it is now at almost as low a figure as in the early days when grain and hay were the principal products of the valley.

This condition was foreseen and commented upon last year when $18 and $20 per ton were the ruling prices, and now that the whole state is full of hay and one would think that it would never again reach $10 per ton, it is safe to predict that it will go to that figure and more.

The Alfalfa Balance Wheel—If it were not for the large acreages of alfalfa that have been sown in the last few years it would be a safe estimate that prices would again soar around the $20 mark in a few years.

But the development of irrigation projects which have brought into use many acres of good farming land where all kinds of crops may be grown, the great fluctuations in prices will be greatly lessened.

Even now with the enormous grain hay crop and the increasing alfalfa crops no feed need go to waste if cattle may be found to eat it up. During the past dry seasons California's cattle herds have been greatly lessened and may not easily be brought up to standard at a reasonable outlay.

To sell hay at $3 and $4 per ton loose in the field, a condition that is now present in some sections of California, is exceedingly unfortunate and ought not to be done if possible to avoid it, and it probably is not done except where dire stress in financial matters makes a sale at some price imperative.

Storing the Crop—If possible to get along without selling the surplus hay and there are no barns to put it in it is still far from a hopeless problem for stacking hay in California may be resorted to when all other methods fail.

Stacking grain hay so that there will be very little waste may be done by any farmer who is at all familiar with eastern methods, and if straw is to be had on the ranch or near enough to make it a practical method the stacks may be capped with it and thus save all of the hay.

Stacking alfalfa hay is more difficult but not impractical, although without straw or some fine material as volunteer hay for capping a considerable depth on the top may be spoiled by rain, particularly if a wet winter should follow the stacking.

Age Is Not Detrimental—Old hay is quite as good as new and by some is much preferred and to be two or three years old should not lessen its value, unless injured by exposure or by mice, rats, etc.

In fact if hay of good quality is the status of this year's crop, then storing enough for one or two or three years' use has its favorable points which will occur to any farmer in accordance with conditions on the farm.

Storing hay, which, if sold at all must go at a very low price, appeals much more to the grower than storing hay which may be sold at a price far above the cost of production. With hay at $4—to which must be added the cost of baling and hauling—it would seem to be advisable to avoid a sale by some extra effort in storing or stacking.

Hay as a Fertilizer—Various estimates of the value of hay as a fertilizer have appeared occasionally and necessarily must vary in accordance with the kind and quality of the hay and the method of its application to the land. In the absence of any exact figures as a guide it would seem safe to estimate that alfalfa hay of good quality would be worth more as a fertilizer than wheat, barley, oats or other non-leguminous crops.

However, it would on the face of it look like poor farming practice to raise, cut and cure a crop of any kind of hay and then use it as a fertilizer. It would seem to be much more business-like to feed it to some kind of stock on the farm, even if it proves necessary to store or stack it for a year or more until the stock needed may be purchased at a fair price, if they are not so obtainable now.

The Petaluma Creamery—Dairymen everywhere in California should read carefully the article on the dairy page of this issue by Manager W. B. Hopkins of Petaluma. That this creamery is a succes is because of its up-to-date organization and efficient management. Other creameries may do as well if organized upon the same or similar lines and stick to their rules.

ADVERTISE THE APPLE.

Growers and Handlers Will Boost the Apple for Health, Wealth and Happiness.

THE appearance of the Apple World, Vol. I, No. 1, whose excuse for existence is to "promote the welfare of the apple" is published by an organization entitled, the Apple Advertisers of America.

This organization claims to be born of great necessity as the greatly increasing acreages of apple trees that are being planted in various states will mean a large surplus of apples in a few years unless the apple habit is adapted by a great many more people, and soon, too. The association claims that there will never be enough apples to go around if all should eat as many as is good for them, and they are doubtless correct in their claim, for the fruit habit is not yet as strongly developed as it should be, and will be, if a strong and united effort is made to awake people to its benefits.

Not Altogether Selfish—This new enterprise is not altogether a selfish one for another claim is made that the apple is good for health and right there they should stick to their text, for if the thousands and millions of people in the United States today, who are buying at fabulous prices, and consuming to their hurt patent medicines and other things not patented, but only good for the dealer who sells them, would turn to the apple for the health that they are not getting elsewhere they would be greatly benefited. So the advertising of the apple, while primarily for the profit of the grower and handler, will carry with it the greatest help to health that is now known. "An apple a day keeps the doctor away," is one of the catchy sayings that the apple advertisers have adopted and has the merit of being also true, which may not be the case always with other advertised health foods and drinks.

The avoidance of doctor bills may well be classed as one of the most important onslaughts on the high cost of living.

Many Ways of Using—Eating apple raw is perhaps the way that most of our big apple crop is disposed of, and no fault can be found with it; provided, of course, that the apples are ripe. Children crave apples and do not get enough of them for their own good. So eating raw apples out of hand or in salads should be encouraged.

Expert cookers of apples are not found in every household, for the contrary is true, and in this department of the housewife's work may be developed by prudent advertising methods, a many fold increase in the consumption of apples.

Methods of cooking and a knowledge of varieties might well form a foundation for a large educational propaganda, which would not fail to be of great benefit to the whole people.

Thinning Tokay Grapes—The announcement of Farm Adviser Frank Lyons that he would experiment among a number of Tokay growers in thinning their grapes is an encouraging move to secure better quality of fruit and possibly more profit to the grower. The thinning of various kinds of fruits is not practiced as much as it should be to secure best results, although some growers are doing some very effective work in that direction, and now that it is proposed to thin grapes the practice of thinning will no doubt become more general and more intelligently done.

Tokays to be most salable should be highly colored and set as evenly as possible on the bunch without crowding. The heavy close bunches are never so good as the loose, highly colored ones and in fact several varieties of table grapes would be improved in looks and quality by judicious thinning. This is particularly true of grapes grown in the bay region or in the cooler districts as compared with the warm interior valleys. The Black Malvoise, a very popular table grape in the bay cities, would be much improved by thinning the closely-set heavy bunches.

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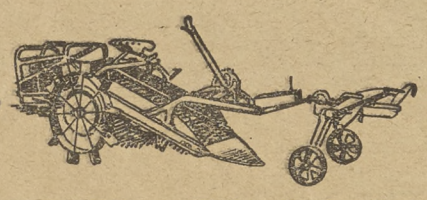

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NEW MACHINE INVENTED TO REVOLUTIONIZE POTATO DIGGING. GREAT SAVING IN LABOR.

To overcome the enormous expense and great loss of time in digging potatoes in the old-fashioned way, a new machine has been constructed, which will do this work automatically. It is proving a great success wherever introduced and very materially cuts down the expense of the potatagrower, thereby largely increasing his profit. This machine is being introduced on the Pacific Coast by Arnott & Company of Los Angeles, who will send catalogues and particulars regarding free trial to any potatogrower who may be interested.

San Jose scale appeared and caused much destruction of fruit trees in California more than 30 years ago.

FRUITGROWING IN AUSTRALIA.

There is probably nothing more remarkable in these days of rapid progress than the amazing development of the Island Continent of Australia.

The development of an active irrigation policy has brought about a new era of closer settlement. The advancement of the country along these two lines, fruitgrowing and irrigation, is capably dealt with in a bright, well-illustrated magazine, "The Fruit World" (Australia), the March number of which has just come to our editorial table for review.

Australia is termed "The pride of the Southern Hemisphere." The fruits produced include apples, pears, peaches, apricots, plums, cherries, loquats, strawberries, and, in the warmer zones, oranges, grapes, bananas, pineapples, mangoes, figs, etc. The area of the fruit and market gardens amounts to 324,931 acres, to the value of $21,557,940. The biggest developments in irrigation have so far taken place in Victoria, with New South Wales and South Australia following.

The state of Victoria has spent $125,000,000 on irrigation works. In the state of New South Wales the Burrinjuck dam, one of the masterpieces of the world's engineering, provides storage for 33,000,000,000 cubic feet, or a volume of water about equal to that contained in Sydney harbor. The state of South Australia contemplates locking the River Murray (the Nile of Australia) and irrigating and reclaiming 400,000 acres.

Approximately 750 acres on the Oregon national forest were planted with young trees this spring.

On the Deerlodge national forest in Montana one lookout station has the record of reporting accurately, by distance and direction, a fire that was 60 miles away.

Ranchers within and adjacent to the Sierra national forest, California, have formed a co-operative association for the prevention of forest fires. They need to use fire in clearing land for farming, and will do it on a community basis, with all members present to prevent the fires' spread.

THE ORCHARD

GROWING CALIMYRNA FIGS.

How Caprification Is Accomplished and the Processes of Harvesting and Drying.

By Geo. C. Roeding.

CAPRIFICATION of the Calimyrna figs extends through the month of June. At this time the figs are about the size of marbles, or slightly larger, and in breaking the figs open the flowers present a waxy white appearance.

Fortunately all the capri figs do not mature at the same time, nor are the Symrna figs receptive in a single day, otherwise in large holdings it would take a big force of men to carry on the work. In four or six-year old trees, from six to 15 capri figs should be hung in each tree, but if there is a plentiful supply of infested capri figs it will do no harm to suspend a larger number. Trees from 10 to 40 years old will require from 20 to 100 figs to each [illegible] a sma[illegible] four t[illegible] from 25 [illegible] older orch[illegible] exp[illegible] never exceeded $1 per acre.

CALIFORNIA FIGS, GREATLY REDUCED.

Distribution of Capri Figs—The capri figs are gathered in buckets, and then transferred to sacks. They are picked off where they can readily be reached from the ground, or are knocked from the tree with bamboo poles when beyond reach. This work should start at daylight when the figs are cool, for the flight of the insect commences just as soon as the individual fruits become slightly heated by the sun's rays, and continues with interruptions for several hours, covering a period of ten days from a single fig, and occurs about the same time each day, until all the female wasps have made their escape.

In former years the figs after gathering were strung on raffia fibre and distributed throughout various parts of the calimyrna trees. This is a tedious and rather slow undertaking, and the work has been very much simplified by hanging a wire basket made of one-inch poultry netting in the trees. These baskets are a permanent fixture, are three inches long, narrowing down toward the end.

Many growers use strawberry baskets for the distribution of the figs. There is no objection except that they must be renewed each year. One wire basket is sufficient for a tree, unless it happens to be a very old one.

Harvesting and Drying—Unlike many other fruits, the fig in order to produce a high-grade article must be allowed to remain on the tree until it loses its original form, shrivels up and drops off. Sometimes it is necessary to jar the trees slightly, if the shriveled figs do not drop, or knock them off with light bamboo poles. From the orchard they are hauled to the drying ground, which should either be a hard piece of ground or an alfalfa field.

Drying in the Shade—The figs are dumped on trays which are stacked at once, for, as a general rule, all figs—with the exception of the very large ones—are dried sufficiently so that when the come on to the drying ground no further exposure to the sun is necessary. One of the universal complaints made about California figs has been their tough skin. This is not due to any unfavorable climatic or soil condition, but is the result of overdrying. The sorting of the figs may be commenced two days after they have been placed on the trays. All the figs which have a slightly leathery feeling to the touch are thrown into a pile by themselves in the drying shed, and the bird-picked and split figs into the cull pile. These are not lost by any means, but sell readily at two and a half to three cents per pound. The soft figs are placed on trays as before, [illegible] stacked, and the figs remain on them until reaching the proper degree of dryness, when they are thrown in with the others. It is advisable to leave the figs in the pile, which may be from three to six feet deep without the fruit being damaged in the least for a period of two weeks, turning the figs over with a scoop shovel at least once during this period or oftener if time will permit.

The Salt Bath—Just prior to delivering to the packing-house, give the figs a thorough washing in a brine having not less than four ounces of salt dissolved in the gallon of water. A prune dipper may be used to good advantage for this work. The figs should remain in this brine for a period of ten to 15 minutes, depending on their condition. They are once more placed on trays, two or three inches deep, exposed to the sun for half a day to allow the water to drain off, and the trays are again stacked. Within two days they can be dumped into sweat boxes, and are ready for delivery. This processing not only cleanses the figs, but it softens the skins, causing them to feel like a kid glove when squeezed between the fingers, and in addition to this the figs present a bright and most inviting aspect. They are a delight to the eye, and appeal to the palate as no other fruit does.

Blastophaga grossorum. A, adult female; very much magnified; B, Head of same from below; C, Head of same from side; D, Male impregnating female; E, female issuing from gall; F, Adult male enlarged. The narrow lines close to each figure indicate th e actual size of these insects.

FOREST NOTES.

The New York state forest nurseries have a capacity of 28,000,000 young trees a year.

The state of Pennsylvania celebrates two arbor days each year—one for spring planting and one for the fall—in April and October respectively.

ORCHARD

IRRIGATION PRACTICE IN THE SACRAMENTO VALEY.

By W. S. Guilford.
Director of Agriculture, Sacramento Valley Irrigation Company, Willows, California.

IN DISCUSSING irrigation practice in the Sacramento valley I shall attempt to cover some of the points that seem to me to have been the cause of success or failure—both with new settlers who are buying subdivision acreages—and so-called "old-timers" who are abandoning extensive grain farming wholly or in part for more intensive operations under irrigation.

Such propositions as the duty of water, cost of pumping plants, comparative value of plants of different kinds—and many other highly important factors have been, or, are being worked out by investigators with time and appliances for such careful and scientific studies. Many of the things I will touch upon are so simple and self-evident that it would seem that no thinking person would ever do them wrong, yet they are repeatedly the cause of inconvenience and loss in every irrigated section of the United States.

The first consideration in connection with a prospective irrigated farm is:

The Choice of the Land.

Factors which govern the value of land for an irrigated farm are—character of soil, contour, irrigation facilities and transportation.

The soil should be selected with reference to the crops to be grown. In almost every part of California where land is for sale it is possible to find similar land to that which it might be thought desirable to purchase, growing profitable intensive crops. If the principal crop to be grown by a prospective settler is prunes, for instance, and in the neighborhood of a piece of land he has selected, prunes are being successfully grown on similar land, he can be reasonably sure of his choice as far as crop adaption is concerned. In general—a rich soil, well-drained and free from hard pan and alkali should be chosen.

Then there is the cost of levelling to consider, and land with an even slope—free from deep depressions that will have to be filled—and not so level that it has to be mo[illegible] long distances in order to make the water run, can often be levelled for irrig[illegible] to $30 less per acre th[illegible] er land.

The kind of an irrigation system from which water is to be secured—whether from gravity flow or pumping—is a consideration that affects future profits. If water is to come from wells the assurance of a supply is of importance—also the cost of pumping and maintenance: The same applies to water from a gravity project. A stream must furnish water throughout the season to be of the greatest value.

Many of the products from an irrigated farm are bulky—and transportation from the place where they are grown to the railroad or boat—and the cost of sending them to market—must be figured for a term of years. It is possible for the cost of hauling heavy crops to a loading point to be a large percentage of the total cost of production.

Unless the prospective purchaser is familiar with soil, crop adaptation, the labor and cost of preparing land for irrigation and the cost of water under different systems—he should get advice on these points from some one who does—for a place well-selected and well bought is well started toward success, while some otherwise good prospective producers of crops are so handicapped by wrong selection of land that it takes years for them to surmount the handicap—if they are ever able to. The average person does not hesitate to pay for medical or legal advice. Why should he hesitate to obtain the best possible counsel on a matter that concerns his future success in so vital a way as the selection of land for a farming business.

The fundamentals of irrigation practice are based on

The Object of Irrigation.

Irrigation is practiced to supply to the soil in the area in which roots take plant food a sufficient supply of moisture for the best possible development of the plant. Many different methods of applying water are necessary to accomplish this result with the different kinds of soil. This is what makes every successful irrigater a student and is the reason that an ingenious, thinking person gets better results than one who simply "irrigates" without knowing what the water is doing.

There is no better way to learn what the condition of the soil is than to dig holes in it—before and after irrigation—to find out how dry the soil is and whether or not the moisture has penetrated to the proper depth.

On one large deciduous orchard in Glenn county we have just dug good-sized holes in every part where there are apt to be different soil conditions. This was done to find out how fast the moisture is drying out—how well the mulch is holding the moisture and how far down the tree roots are. The trees were planted last year. We found that wherever we were able to disc the land and get a good mulch before the soil became hard and dry there is plenty of moisture in one place, and irrigation now will connect the lower moisture up to a place where the greatest root development is (two to three feet) before it gets so low that the tree will suffer. To irrigate now and carry these few trees through without a check is worth many times the cost of digging all the holes.

While the water is running the depth of penetration can be determined with a sharp-pointed steel rod, and every irrigater should use one of these frequently. It can be shoved into the ground easily to the depth that the moisture has penetrated.

Until we have more definite data as to the moisture requirements of plants and some easy method by which the irrigator can test the soil for moisture content, the condition of the plant and the soil, as observed by the operator, is one of the best guides as to when irrigation is required. It is difficult to tell just what to look out for in the plant when it begins to need moisture, but the careful, observing man readily learns to recognize the signs of need or distress. For instance, the foliage on a potato plant which is getting dry becomes a dark, almost black green, which can be distinguished almost as far as the plant can be seen. It is very different from the normal, healthy green of a plant well supplied with moisture—and different again from the sickly light yellow that is produced by excessive irrigation.

In order to be of the greatest possible benefit to the tree or plant irrigated, moisture must penetrate as deeply into the soil as the roots can feed to advantage. Water penetrates open, sandy soil readily—and the biggest problem in this kind of land is to get it over the surface without wast[illegible]bsoil. and

[illegible] with a large pe[illegible] of clay and silt—as it is in a great part of the Sacramento valley—the difficulty is to get enough penetration. When the soil is thoroughly dried out to a considerable depth as it was last year—a small stream of water must be run for a long time before it penetrates three to five feet. Two years ago, at the Monroeville orchard of the Sacramento Valley Irrigation company on the Sacramento river near St. John in Glenn county—the soil was thoroughly dried out to a depth of 15 feet and the rains of the winter of 1912-1913 penetrated only two or three feet and did not connect the lower with the upper moisture. During the season of 1913 we were compelled to run small streams along the tree rows for ten days in order to get a three to five-foot penetration as indicated by the steel rod when shoved into the furrow—but irrigators were required to get this penetration—and so control the streams that very little was wasted at the end of the 660-foot rows.

In our orange grove at Orland—which is on a heavy clay land—in fact I do not know of any heavier soil in the valley—it had been the practice for years whenever it was irrigated at all—to flood the land. After government water was available three or four years ago—it was flooded every ten days or two weeks and cultivated between irrigations. This practice was gradually breaking down the granular structure of the soil and burning out the humus and vegetable matter and after the first irrigation after we purchased the place in June, 1912, I could find no place in the orchard where it was possible to stick a spade—or even to dig without a pick—over nine inches into the soil. For the next irrigation we plowed four furrows between the rows—made head ditches and controlled the water into furrows through lath boxes. The soil was so hard that it was almost impossible to plow the furrows. It being necessary to go through two and three times with the plow before they could be opened up enough to run water in. Too large a stream was turned in for the first irrigation—and the bottoms of the furrows silted over so that the water ran through the 400-foot rows almost as well as though the furrows had been cemented. They were furrowed out again—a little deeper this time—and a small stream turned in that required 24 to 48 hours to get through the rows—soaking in pretty well as it passed along. Such an extreme measure as this is seldom necessary but it certainly was in this case—and we kept a small stream running for four or five-day periods cultivating and furrowing out between times—nearly all of the summer season of 1912 and irrigated a great deal in the same way during the dry winter of 1912-1913. The problem of getting moisture into the soil for the use of the root systems of these trees involved supplying vegetable matter to the soil in every available form—straw, manure, prunings and weeds. Now we are just getting a good enough soil condition to grow an abundant crop of wild oats, burr clover, fillaree and other plants—and we have allowed this vegetation to become quite mature before plowing it under this year. And if we can get a satisfactory seed bed soon—we will probably plant alfalfa and let it stand two or three years before plowing the orchard again—to further open up the soil and subsoil and improve its physical condition. Deep furrows will be plowed out so that irrigation water can be supplied. I do not believe this practice would be advisable unless an ample supply of irrigation water was available—but fortunately, there is no shortage of water in the Sacramento valley.

I have never seen so great a change in the character and mechanical condition of soil—in so short a time—as there has been in this orange grove—and while it is not like loose, mellow, sandy loam yet, it absorbs moisture many times more readily than before and is a far more pleasant and tractable soil to irrigate and cultivate than before. And that this treatment has been proper is conclusively shown in the increased vigor and growth of the trees and in the crops they have produced.

During the season of 1913 it was found to be difficult to get moisture to penetrate more than 9 or 12 inches in some heavy land on which there was young seeding of alfalfa. Water was delivered in a head of 5 cubic feet per second and it was ordinarily divided into 3 or 5 checks. The checks are 25, 40 or 50 feet wide and 660 feet long. By dividing the head into 10 or 15 checks and letting it run for a longer time—then turning it off these checks—irrigating some more—and then irrigating a second time before they dried out it was possible to get a penetration of 24 to 48 inches.

So much in a general way for the object of irrigation—the importance of studying the individual case—the need of constant observation of changing conditions and the application of common "horse sense" and judgment to the problems presented.

After a prospective irrigation farmer has selected a location the next step is the

Preparation of the Land.

Unless the owner of the land—or the man who is to do the levelling—is very familiar with this kind of work—it will pay to get a reliable, experienced engineer to lay out the place. By experienced, I mean one who has had experience in the particular locality and under similar conditions to those prevailing on the place to be improved. In this way it is possible to benefit by the mistakes that have been previously made in handling the soil, water, etc., in the district in question.

Even if the owner is experienced—a map of the place—with the proposed present development and all future development—should be made—showing the approximate location of drains, ditches, checks, or borders, boxes, etc.

During the early days of the development of the Sacramento Valley Irrigation project, these farm plans were made by the company engineers for all settlers who made application for them—and blue prints were furnished. The engineer first discussed with the purchaser his general plans for developing his place—found out about where he wanted to build—how much alfalfa he wanted and how much orchard. He then laid out the drains and ditches in the most convenient places for operation and where they could be built most cheaply. Some changes have been made in these plans by the settlers as they have developed their places—but in the main they have been followed and even though only a small part of the place may be developed during the first or second year—such work as is done is not wasted and will not have to be done over again to fit into future plans—as has often been the experience on farms developed in a haphazard way and without definite plans.

There seem to be a good many places where a prospective irrigation farmer can spend money for the counsel and advice and service of men experienced in the details of the business with the assurance that if he gets the right man and the right service it will be money well spent. In fact, $100 spent for advice could easily save $1000 in real absolute value in the purchase of one place rather than any one of several others that might seem equally desirable to a novice—and an experienced engineer can surely make a big saving in development costs by properly laying out and planning the work to best meet the requirements of the particular job. The per acre cost of such work on the developed place will not be great.

There are a great many good land levellers and farm developers in the Sacramento valley now—and many good schemes for removing the dirt required in digging drains, constructing ditches, making borders and levelling the land between the borders—assuming that a border system of checking land for alfalfa or trees is to be used. And any system is a good one that results in the construction of drains of ample depth and capacity—ditches big enough to carry the water required and with good, full banks that will insure their stability and a minimum of breaks and trouble—borders or checks large enough to control the flow of water, but not larger than is necessary to accomplish this after they have settled—and in land well levelled between the borders so that the water can be evenly applied and quickly and completely drained off when required.

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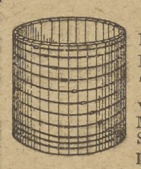
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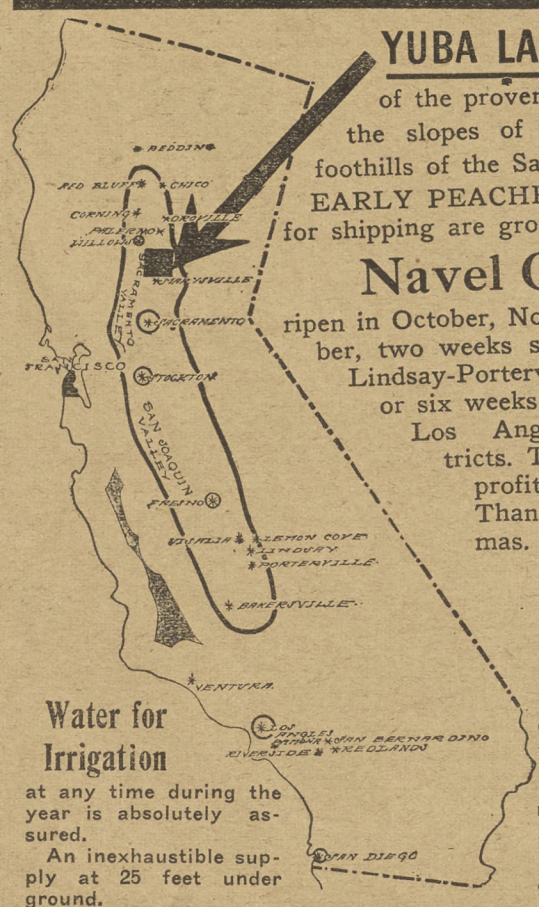

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CITRUS FRUITS

ders 25 to 50 feet wide and 660 feet long have been found very satisfactory for alfalfa—and for tree-planting it is an advantage to plant trees on these small borders, thereby giving a little more open and well-aired soil for the roots to start in. This is especially beneficial if there is a wet year one or two years after planting.

As I have said—there are a good many land developers in the Sacramento valley—with many favorite plans for proceeding with a job of levelling—but my way is to first dig the drains—then the ditches—then the borders or checks—and lastly—move such dirt as is necessary to complete the levelling of the land between the borders. Dirt must be moved—either in making cuts or fills—for each of these features—and my plan is to never move the same scraper full of dirt but once—if it is possible to avoid it. The dirt that comes out of the drain is used for any part of the balance of the job where it is most convenient to waste it—on a ditch bank—a border or in a hole in the check—but it must be deposited where it will not have to be moved again. The dirt excavated from the delivery ditch goes in a border or in a fill, and dirt required for banks comes from high places in the check. Then, the balance of the dirt for the borders comes from cuts in the checks and any remaining fills to be made in the checks after borders are made must come from the remaining cuts within the checks.

Now, this work is frequently done in exactly the opposite order—the land is levelled with some levelling device or even with scrapers, then the borders are made. Some of the same dirt that has been moved to fill a hole in the check may have to be moved again to get dirt for the border, and some more dirt moved again to fill the hole just made. Then, a borrow pit must be made to make ditch banks and frequently, a long haul made to spill the dirt from the drain evenly over the check.

I do not recall an instance of too great care being used in the levelling of land. I know of many cases where too much money has been spent for the results accomplished—but I mean where a job has been done so well that the land irrigates more easily than is profitable or where it drains too perfectly.

But [redacted] of the [redacted] too ca[redacted] for irrigation. [redacted] not get water—low spots where the crop drowns out—ditches that break—drains that are too shallow or that do not work—all of these things can be remedied with far greater ease and much less cost before a crop is planted than after—and there is no better or surer way to find out about these things than to try out the job with a head of irrigation water before any crop is planted. This will show up the weak places at a time when they can be easily and quickly fixed. Then after they are all remedied try irrigating the land again before planting—there may be several other little things you will be glad that you have fixed before while there is no crop in the way.

And it is a wise thing for the beginner to lay out a small piece for the first planting—rather than the whole place. There is no way to learn how to prepare a place for irrigation so that it suits your individual tastes so well as to fix up a small acreage first. There will be sure to be some little changes you will want to make in the balance of the place.

How about the

Water Delivery System.

Whatever this is—whether open ditch or underground concrete pipe—have it of ample capacity. I know of no better way to determine what this will be for the individual needs of any particular place than to visit some place that a system similar to the one contemplated has been installed. An engineer can be of help on the size and capacity of concrete lines—as he can on open ditch capacities—but any irrigator who has handled a head of water in a ditch will tell the inquirer that the ditch must be plenty big for the head of water—have big, full banks—and if possible, the slope of the banks should be such that they can be mowed with a horse mower. It is hard to find dirt to enlarge a small ditch after a field is completely seeded to alfalfa.

The working out of all of the details of irrigation practice in the Sacramento valley is a proposition that is very much in its infancy—the best general advice that I can give to anyone is to study the individual problem and don't be afraid to dig holes in the ground.

Think up a number of indoor jobs for the rainy day. It will make the time pass faster for the hired man.

PLANTING A CITRUS GROVE

Explicit Directions for Planting Citrus Trees of Value to Prospective Citrus Growers.

By A. J. Cook.

AS BEFORE stated, the land prior to planting should be thoroughly prepared. This means that it should be deeply and thoroughly cultivated, well enriched by previous cover crops plowed under or by use of stable fertilizer, af least ten big loads to the acre. In a virgin soil manure may be safely deferred for two or three years. The ground should also be leveled and graded to perfection, as this will save immensely in labor and peace of mind in the future care of the orchard. A uniform grade is desirable, with a minimum of 1 per cent fall if possible. We should never grade off the surface soil where contour or change in direction could make it unnecessary. The reason is obvious. The surface soil is usually better supplied with the necessary soil elements. I fear not all will follow this advice, but those who do not will surely realize their mistake later.

Procuring the Trees—It is wise to see the trees before purchasing, to make certain that they have been grown under proper conditions. One had best purchase some months before planting, as he is more likely to secure good trees. The price usually runs from 40 cents to $1 per tree, varying with size, supply and demand, and number purchased. If possible, one may well buy selected trees, paying more. This is one signal advantage among many of growing one's own trees from seedbed to orchard.

Too much care cannot be exercised in removing budded trees from the nursery and preparing them for shipment. There are two methods: The open-root and the balling. A ditch 18 inches deep on one side, eight inches from the row, permits cutting all the roots on that side, and also the tap root or roots. Then for open roots, the tree may be crowded into this trench, breaking as few roots as possible. This is allowable only for nearby planting. A long, sharp spade [redacted]y to cut the roots on the other th[redacted]ides. If we wish to ball, which is best in most all cases, we tamp the soil, shape the ball and lift the tree onto burlap, which is then folded and tied about the trunk. Haste in transportation is always in order. The trees upon arrival at their destination should be heeled in, pointing southwest, in case of open roots, or planted at once. A furrow with a 45-degree slant makes heeling in easy. None but the open-root trees should be heeled in, and it were always better to set at once. If one grows his own nursery stock, this is the more easily accomplished. No one should order trees until he is ready to set them. From the heeling-in furrow to the orchard, trees should be handled with as little delay os possible, and unless balled should be covered with a wet blanket, especially if the day is hot.

Arrangement of Trees—There are four methods of planting as to arrangement of trees—rectangular, triangular, quincunx or hexagonal. The first, square or rectangular, is simplest and most common. Indeed, it is the almost universal method today. If in squares, the trees are often planted 20 feet apart, which gives 108 trees to the acre. Most prefer to plant further apart, at least one way. If 20 by 25 feet, then we have 87 trees to the acre. It is quite common to have the squares 22 by 22 feet, which takes 90 trees to the acre. This is quite close enough, and there is wisdom in increasing this. The squares are often 24, 25 or 26 feet wide on each side.

In the triangular system the trees are parallel to one margin of the field in one direction and diagonal to this the other way. The trees will be further apart on the diagonal lines. Suppose we wish to plant 20 feet apart in the rows parallel to the margin. We then lay off the orchard in 20-foot squares. The first row will be at the angles of the squares, next to the margin of the field. The trees of the second row will be at the middle points of the opposite sides of the squares, etc. Each alternate row will have trees at the angles, the next at the middle of the sides of the squares. This gives 98 trees to the acre. The trees will be 20 feet apart one way and a little more than 22 feet the other way. This has no advantage, except it permits cultivating or working the ground in three directions.

The quincunx system is like the rectangular, except that a tree is planted

THE DAIRY

in the center of each square or rectangle. This adds to the number of trees. If the square is 20 feet on each side, there will be 199 trees to the acre. It also serves when more trees are desired in a young orchard, some of which will be removed as the trees age. It makes this removal easy, without affecting the symmetry of the grove.

In the hexagonal or sextuple system six trees mark the angles of an equilateral hexagon, with an extra tree in the middle point between them. In case the trees are 20 feet apart, the first row will be parallel to the one side of the field, and the trees 20 feet apart. Two 20-foot lines stretched from the first two trees of this row towards the opposite side of the field, approximating each other, will fix the location of the center tree where they meet. This will be the first tree of the second row, which will be parallel to the first row. The trees of the third row will be exactly opposite those of the first. Here alone, of all the systems, each tree is equally distant from all adjacent trees. If the trees are set 20 feet apart, then 124 trees will be set on each acre. Here the trees may be cultivated diagonally in two directions and in a third direction parallel with the side.

Planting the Trees—Citrus trees may be planted at almost any time; better from February to August. I prefer February, when the trees are more dormant, though the heaviest plantings are in April and May, and as late as June. This avoids frost, and the trees will respond to the temperate heat of spring.

The holes may best be dug just prior to setting the trees, and should be ample in size, not less than two and a half feet in diameter. They should be dug a little deeper than necessary to accommodate the trees, the extra space being filled with fresh, rich, fertile soil. The bruised roots of each tree should be cut off diagonally with a clean cut, just above the wound, and the top cut to balance the root pruning and to give all the trees similar and symmetrical heads. Some of our growers leave all the top and foliage intact; others prune the top heavily, removing all the leaves. I think the new [illegible] above course, trimming to [illegible] and root system, is preferable.

As the trees are placed in position, the roots, if the trees are not balled, should be evenly separated by hand, and in every case the hole filled three-fourths full, with good surface soil, when enough water should be added to settle the soil thoroughly about the roots or ball, and to crowd out all the air and saturate the boll through and through, after which fill in to the top, leaving the trees a little higher than they stood in the nursery, as they will slightly after they are planted. The bud should be some inches above the earth. Not only should the bud be well above the ground, but it is equally important, probably more important, not to plant the roots too deep. Preferably the crown roots should not be planted more than two inches below the mean surface level of the crown.

As soon as the trees are all set they should receive a thorough irrigation, especially if not balled, and a good cultivation as soon thereafter as the soil is in proper condition, both of which, as we have seen, should be deep.

NAVEL ORANGE ANNIVERSARY.

Tentative arrangements for the celebration in Riverside of the fortieth anniversary of the founding of the Washington Navel industry include such features as an international congress of representatives of the orange industry, a banquet for a thousand delegates to the congress and orange-growers, erection of a monument to the industry and a magnificent pageant to be participated in by 25 or 30 orange-growing communities of the state, which will bring out in a dramatic way the struggles through which the Washington Navel orange industry has gone on the way from its birth in Riverside to its present position.

The twelve main exposition palaces which are now either completed or in course of construction upon the grounds of the Panama-Pacific international exposition at San Francisco, are: The palace of machinery, the palace of education, the palace of food products, the palace of agriculture, the palace of mines and metallurgy, the palace of varied industries, the palace of liberal arts, the palace of manufactures, the palace of transportation, the palace of horticulture, the palace of fine arts and festival hall.

THE PETALUMA CO-OPERATIVE CREAMERY.

Successful Enterprise in Which the Producer, Manufacturer and Distributor Pull Together in Harmony.

CO-OPERATION of dairymen has not always been successful in California and the old co-operative creamery plants were mostly failures. A recent attempt to combine producers and provide for the selling end, in interest of the creamery, in the city of Petaluma, has apparently worked well from the start. And we have secured a statement from the manager, Mr. W. B. Hopkins, herewith, that should interest our dairy readers especially:

Editor Farmer:

Cream Buying Peculiar—The business of buying cream is peculiar, in that the dairyman must deliver his product to the creamery and take the buyer's word as to what it tests and how much it is worth.

He is told what his cream tested, perhaps in a few days, and in a month, or perhaps two weeks, he is paid for it, and then only does he find out what his cream was worth.

This peculiarity of the creamery business has led to much dissatisfaction amongst dairymen, and causes the creamerymen no end of worry and expense trying to keep their patrons satisfied.

A commission firm in San Francisco, recognizing this fact, is working along

THE PETALUMA CO-OPERATIVE CREAMERY

[illegible] bet- [illegible] ry- [illegible] bute their [illegible]

A N[illegible] result of their efforts, the Petaluma Co-operative Creamery was established and commenced operations January 3, 1914.

These commission men went to the dairymen of Petaluma with a proposition that practically amounts to a co-operation between the producer and distributor. The main facts of the agreement are that the dairymen own and operate their own creamery, the commission men to have the selling of the entire output for one year, agreeing to pay a liberal price for same, based on San Francisco quotations; it being understood that the contract be renewed from year to year, subject to such changes as the buyers and directors of the creamery should agree to.

Expert Services Free—The commission men further agreed that one of their partners, who is a recognized authority on creamery efficiency and buttermaking, would give his services free to the creamery, helping them in planning their factory, selecting the equipment and visiting the factory from time to time to assist in keeping the methods and product up to a high degree of efficiency and quality.

The plan is working out very satisfactorily. The dairymen are getting a better price for their butter fat than they were receiving last year. In addition to that their creamery has earned over $4000, part of which will soon be distributed in the form of dividend on the stock.

The distributors are receiving a large output of butter on which they can rely as to quality and are not kept in uncertainty about the supply.

Plan of Organization—The creamery was organized as a stock company and each dairyman allowed one share for each cow in his dairy; par value of the shares $5. Restrictions are that no one can own stock who does not own and operate a dairy; that no one may own more than one share for each cow; that the directors have the right to appraise the value of any shareholder's stock who has quit dairying, paying him the appraised value of the same, placing the stock in the treasury of the company to be resold; that any stockholder selling cream to a competitor is subject to a fine of $10 for each offense.

Each dairyman delivers his own cream; the company does not operate any trucks or wagons.

Cream is received from the wagons on a raised platform, making it convenient and easy to unload.

Cream Received and Cans Sterilized—It is quickly weighed, inspected, sampled and dumped into a receiving vat. Over this vat is a rack on which the cans may be inverted and steam jets drive out the cream, leaving none sticking to the cans. The can are then washed, steamed and dried with a special machine for that purpose.

Very little off-grade cream is received; if any does show up, however, it is graded out and churned separately and the patron sending it in is notified. There has been very little difficulty in this respect, as the members are made to realize the importance of keeping their cream in good condition.

Ripening and Churning—From the receiving vat the cream is pumped by a sanitary pump to any one of the four ripeners.

The ripeners are the combined ripener and pasteurizer type, and "batch pasteurizing" is practiced, that is the whole batch of cream is heated to 145 degrees and held 20 minutes. After being pasteurized it is quickly cooled to 48 degrees and held until next day and churned in two No. 9 simplex churns.

Packing and Shipping—The butter is packed partly into 70-lb. cubes and partly into 800-lb. moulds. From the moulds the butter is cut into 1 and 2-pound squares, wrapped and shipped in 60-lb. cases.

Cartoning is done by the buyers, after it reaches them in the city.

An ice machine keeps the temperature in the butter-room at a low point, in order to chill the butter before shipping.

Also the ice machine keeps the brine in a large tank, under the floor of the butter-room, close to a zero temperature.

This brine is pumped through the coils of the ripeners to cool the cream.

The Power Plant—A 15-horsepower electric motor drives the machinery, and a 20-horsepower boiler furnishes steam for pasteurizing and cleaning.

The building was planned and machinery installed in a way that the highest efficiency can be obtained in operating the machines. No climbing up and down stairs, a running from one room to another, work is all done in one large workroom on the same level.

Floors are all of concrete, that drain quickly; walls are of cement plaster, plenty of windows let in abundant light and dark or out-of-the-way corners have been avoided.

Advantage of Co-operation—The advantage of a co-operative creamery are many. The dairyman takes a personal interest in the affairs of the company. He feels that he is getting a square deal as to weights and tests and if properly informed as to the way the business is being conducted, he knows that he is receiving all that is coming to him, and is satisfied and loyal to his creamery.

The Petaluma Co-operative Creamery has from the start made a practice of keeping all of its members fully informed in regard to the business. A statement is furnished each member once a month showing the results of the month's business. The amount of butter sold, the average price received, the average price paid for butterfat, the average San Francisco quotations, the cost of manufacturing, the profit or loss, are part of the information furnished in these statements.

This has been very popular with the membership and serves to keep up an interest in the creamery, and also in gaining new members.

Thirty-three dairymen were represented when the creamery commenced operation, since then 15 more have joined, making the total now 48.

For the six months since the creamery opened 350,000 pounds of butter have been made out of cream delivered by the members and no cream is purchased, excepting from stockholders.

Amount of Capital—These 48 members own 2697 shares making a total capital of $13,485, practically all of which has been paid in.

Real estate and building cost $6963.97 and equipment $7908.95.

The company is capitalized at $25,000 and it is confidently expected that the remaining stock will all be sold in the next year.

A large number of "cautious" dairymen are watching the operations of the company and as soon as they are convinced that the creamery is being honestly and efficiently managed there will be a rush for the stock that will make the Petaluma co-operative one of the large creameries of the state.

A Milk Mystery.

"Do cows drink fish, Reginald?"

"Oh, you foolish dear! Why, of course not!"

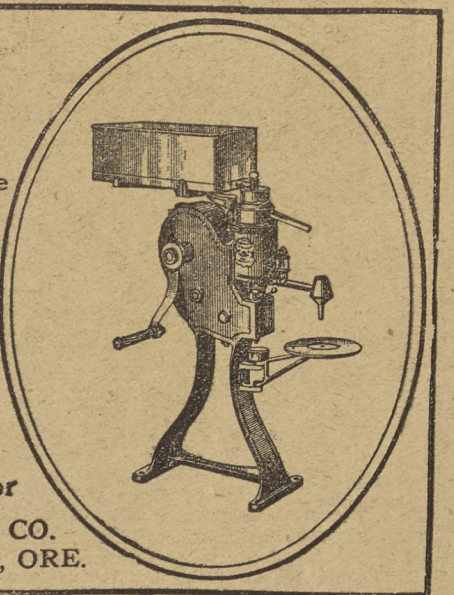
"Well, I found two minnows in our milk this morning."

Has your farm a silo? If not, you had better enlighten yourself more concerning their great value in the dairying business. A silo enables the farmer to store a greater amount of feed in less space than he can otherwise do. It requires double the amount of space to store the same amount of dry nutriments and roughage.

UNITED STATES
CREAM SEPARATORS
For the THRIFTY and those who appreciate
GOOD QUALITY MOST

If you believe in improving the quality of your dairy herd;
If you believe in seeking conditions which will help you most;
If you believe in making more money with less labor and annoyances, and in the end with less expenditure;
If you believe in making your farm and dairy a well organized, efficient manufacturing plant;
You cannot be best equipped without

THE 1914 MODEL
United States Cream Separator
VERMONT FARM MACHINE CO.
474 Glisan St., PORTLAND, ORE.



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Cheapest food in the market today.
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300 acres—Dairy and stock or citrus. Fine buildings. 100 acres bottoms, irrigated, $20 acre.
300 acres—Bottom land, under irrigation, 2½ miles to best town in Sacramento Valley. Suitable for vegetables, dairy, etc; $5750. Terms.
3600 acres—Stock ranch, near R. R. Well watered; fenced; winter and summer range. Lots farming land; $8 per acre.
Tell me what you want. Will send list.
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We are offering for immediate delivery the improved forage and fruiting varieties Burbank cactus. We guarantee all plants true to name. A liberal discount on orders for 1000 leaves. Send for catalogue and price list.
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Use any injector, but Cutter's best.
The superiority of Cutter products is due to over 15 years of specializing in vaccines and serums only.
Insist on Cutter's. If unobtainable, order direct.
THE CUTTER LABORATORY, Berkeley, California.

Farm Telephones

There are about a million Kellogg compact type magneto farm line instruments in operation in this country today, which is convincing evidence of the splendid operation and reliability of this Kellogg product.

Fine quarter-sawed oak woodwork, handsomely finished; loud ringing, non-adjustable, non-sticking ringer; carefully adjusted transmitter arm that will not wear out and hang down loose after a few months time; powerful generator furnishing ample ringing current—rings over the heaviest loaded country lines; accurately designed receiver, steel re-inforced to prevent breakage as is also the transmitter mouthpiece; and lastly the world-famed Kellogg local and long distance transmitter which reproduces the voice with the greatest distinction. It is guaranteed free from inherent defects for five years. These are all features which make Kellogg farm line instruments ideal for rural operation.

We have excellent facilities for making prompt shipments of our goods. All instruments are assembled complete in our own factory in Chicago, which is the greatest railroad center in the country, assuring prompt transportation.

One reason we have grown so rapidly in our fifteen years of manufacturing is due to the fact that men in the operating field have had our liberal support in the investigating of methods for improving service. In turn we have gained their confidence and have benefited accordingly. Kellogg farm line instruments are known throughout the world for their long life.

Each new piece of apparatus which we offer from time to time has been designed with a mind to bettering service, rather than saddling "freak equipment" on a customer solely with the hope of reaping a few extra dollars.

Write for our prices. Send for our big bulletins 70—F on Magneto Telephones and 69—F on Magneto Switchboards. We will mail them promptly.

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Kellogg Switchboard and Supply Co.

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GROUND PHOSPHATE ROCK

The Natural Plant Food and Permanent Soil Builder.

1000 lbs. per acre once in each four years will cost about $1.00 per acre per year. At Penn. State College $1.05 invested in Rock Phosphate gave increased yields of $5.85—over 500 per cent. At Maryland Ex. Station $1.96½ gave $22.11—over 1000 per cent. At Ohio Station each dollar paid for itself and gave $5.68 profit. At Illinois Station $2.50 gave the same return as $250 invested in land.

Each ton contains 280 lbs. of phosphorus, not rendered available artificially by high-priced destructive acids, but so finely ground as to become available in nature's own way.

UNITED STATES PHOSPHATE CO., Salt Lake City, Utah

Write for literature.

"Perfection of fineness in grinding," our motto.

You Don't Need Cash To Buy From Me

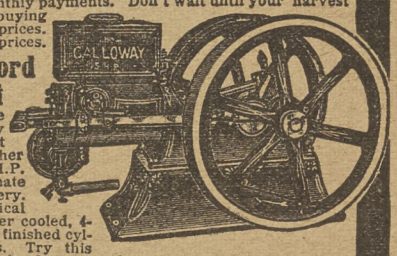
If ready cash is short and you don't wish to borrow, you can still buy from Galloway. I'll trust you. Buy now and pay later. Mine is the first house to offer you farm equipment direct from factory at low prices, cash or credit. I've always made my prices low. Now I make my terms so easy any body can buy a gasoline engine, a manure spreader, cream separator—

5 New Selling Plans

Take any one you want. Save money no matter which you take. Here are my five plans: 1—Cash with order. 2—Bank deposit until you've examined the goods. 3—Part cash, part notes. 4—All notes. 5—Small sum down, balance in small monthly payments. Don't wait until your harvest money comes in. Don't go buying on credit here and there at fancy prices. Get it from Galloway—factory prices.

Every Farmer Can Now Afford an Engine; $10 Down Gets It

A good gasoline engine is necessary on the modern farm. If price or lack of ready money has kept you back you needn't wait any longer. The Galloway costs less than other engines sell for at wholesale in carload lots. 5 H.P. $98.50; others, 1 3-4 to 15 H. P., at proportionate prices. Made in immense quantities with labor-saving machinery. That's why I can make these prices. The Galloway is a practical engine that does more work at less cost than any other. Water cooled, 4-cycle, battery jump spark ignition, hit and miss governor, well finished cylinders, chilled steel crankshaft, feather balanced fly wheels. Try this engine 30 days. Compare it with others regardless of price. Judge for yourself.



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You can't equal it. Outfit consists 2 1-4 H. P. water cooled pumping engine. No. 4 double geared, self oiling pumping jack with 16 ft. 2 inch 4-ply rubber belting. Everything ready to hitch to your pump and start. Let me send you my **Special Catalog** on pumping engines and supplies. Engines and equipment for pumping wells, for irrigation and every purpose. Cash or credit. Money saving factory prices.

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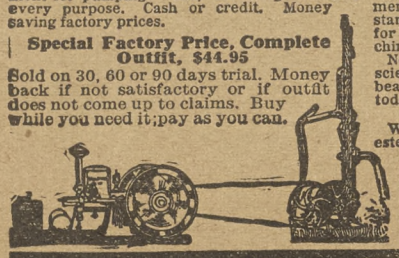


$4.80 Down, Balance Monthly, Buys a Galloway No. 7 Cream Separator

It's positively the sensation of the cream separator field. It has them all sitting up and taking notice.

Travel 20,000 miles, look over every factory in the United States and all the foreign countries, you won't find its superior at any price. Made in our own great factories in tremendous quantities from finest materials on best automatic machinery by skilled workmen, all parts alike, interchangeable and standard, and sold to you direct from factory for less money than middlemen can buy machines not as good in carload lots for cash.

New Galloway Sanitary is the most scientific, cleanest skimming and most beautiful design of any cream separator made today and I have seen them all.

Write For My Free Catalog

Write me today. Tell me what you are interested in. I'll send you catalog by return mail, explain cash and credit proposition and show you how I really divide the melon with my customers.

Wm. Galloway, President

The William Galloway Company

1547 Galloway Station Waterloo, Iowa

THE FARM

WOOLGROWERS URGE LEGISLATION.

Committee Appointed at the Conference Recommends Better Protection for Sheep, Federal Standardization of Wool, and Government Farms and Colleges.

AS A result of the sheep and wool conference held in Washington recently, growers and manufacturers are urging a federal bounty system as a means to exterminate predatory animals on western ranges, the enactment of state laws to control dogs in farm states, the standardization of wool by the department of agriculture, the establishment of government sheep breeding farms to determine the breeds best adapted to various conditions, and the creation of wool colleges for the promotion of more scientific methods in wool production.

In the report addressed to the secretary of agriculture by a committee appointed for the purpose, it is pointed out that the sheep industry of the United States is now valued at approximately $230,000,000, but that unfavorable conditions are causing the supply of sheep to decrease rapidly. The conference was called by the secretary in order to consider the problems presented by this situation.

The committee presents its conclusions in part as follows:

"A careful estimate indicates that approximately $15,000,000 worth of poultry and live stock are annually destroyed in this country by the depredations of predatory wild animals. In the western states, on which most of this burden falls, the great percentage of these predatory animals are bred and raised on land properly withdrawn from settlement by the federal government. Under such conditions, those interested in our animal husbandry feel that the nation should assume its share of this burden through a system of national bounties.

"In the farming states, thousands of sheep are annually destroyed by dogs and this menace keeps many farmers from taking up sheep husbandry, thus re[illegible] a[illegible] fo[illegible]bject in m[illegible]spectfully [illegible]rtment of agriculture could materially assist in securing such legislation by giving this movement its moral support in every way possible.

"At the present time, we have in the United States no generally accepted standards for the determination of the various grades of wool. This lack of standardization makes it impossible for the woolgrower to know the grade of wool he is producing or the value of it in the market. We appreciate the most useful work done by the department of agriculture in the standardization of cotton and we urgently petition that at the earliest possible moment your department will take up the matter of standardizing wool.

"Woolgrowing is a science that requires not only the sound judgment of practical breeders, but the technical knowledge possessed by the trained expert. We therefore appreciate that under present conditions there is immediate need for the establishment of government sheep-breeding farms, one of which shall be located in the intermountain states and another in the central part of the United States, where, under the supervision of experts, experiments may be conducted to determine what type of sheep produces the most desirable quality of wool and is best adapted to the conditions existing in the various parts of the territory concerned. In connection with this government breeding-farm, we would urge the mainteance of a wool college where a short course in wool, woolgrowing and sheepbreeding would be available to those connected with our sheep industry. The urgent need of such institutions leads us to ask that every effort be made to establish them in the near future."

Nine out of ten sick hogs have hog cholera, is the verdict of the U. S. agricultural department.

One reason why corn fields should be turned into the silo is that dried fodder corn deteriorates rapidly and toward spring becomes hard, brittle and possesses little palatability.

No man knows what is ahead of today or what is just around the corner. The only thing for us to do is to step where we can see clearly and be prepared to meet with confidence and courage the obstacles which may arise tomorrow.

WOMEN AS FARM OWNERS.

The Advantages of Farm Life Are Becoming Known, and They Are Buying Farms.

IT IS AN ENCOURAGING sign of the times that women are conspicuous in every movement to give to city people the advantages of rural life. Women who love the country have an important and pleasing task in making the farm more attractive than it seems to have been in recent years.

It is their province to impart the proper coloring to the agricultural vocation, so that the young people instead of hastening away to the towns as early as possible will come to appreciate the possibilities and delights of the country.

In a most positive way women are lending their influence to the spread of the little farm idea. They are becoming landowners to an extent never before known in this or any other country.

Not all of those who are seen on the farms today are country bred. Around every large town little farm projects are on the increase, and city women are largely responsible for the movement of thousands of families to the rural districts.

There is a sociological as well as a commercial reason for this. City families who take farms are likely to gain in many ways. By escaping from the crowded city they are sure to have better health and independence than they could have in town. They can improve the standard of their living and at the same time reduce expenses.

All this is of vast importance to city families. Of course the very fact that family life is so radically aided by securing land and a home in the country gives women a direct interest in the movement.

HUMUS DESTROYED BY FIRE.

Forest Fires Harm Soil Fertility and Should Be Kept Out of Woodlands.

A DEFINITE relation between the amount of humus or vegetable matter in the soil, and its crop-producing power as shown by yields of corn, is given in figures just issued by the department of agriculture. The department therefore advocates the use of various methods to introduce the required humus into the soil.

Experts of the forest service state that the soils of the whole country, and particularly of the south, have lost and are losing immense amounts of this source of soil fertility through forest fires which apparently do little immediate damage but rob the soil of accumulations of humus. In many parts of the southeast, land is being cleared for farming, and where such forest land has not been burned there is a large percentage of vegetable matter which provides considerable fertility and a good texture. Moreover, this soil has a greater capacity to absorb and retain moisture, and thus is less likely to be washed and gullied under heavy rains. For these reasons leaving out of account the damage to standing timber, the department's authorities are agreed that fire should be rigidly kept out of woodlands.

COLLEGE STUDENTS AS FARM HANDS.

In the current issue of Farm and Fireside J. M. Taylor writes an article entitled "College Students for Summer Help." The following extract from the article tells why many college students like to work on farms:

"Now is the time for us to secure men who are not only willing but eager to work on farms. After nine months of a steady diet of indoor brain work these men regard any kind of physical work in the open as a pleasant vacation. They jump at the chance to do farm work, or, as the entire curriculum of farm labor is expressed in their vernacular, to 'pitch hay.' First and foremost the physical labor appeals to them, for it gives them an opportunity to harden their muscles. Second, the wages, though not princely, are as high as they could expect to draw at many another branch of labor, and they have no board to pay. Through some strange psychological quirk this fact that he does not have to pay board appeals remarkably to the average student, perhaps because board forms his heaviest drain during the school year."

Good feeders prepare in advance for their animals.

THE GRANGE

FIVE RULES FOR BORROWING MONEY.

To Borrow Money Without Having Carefully Considered Plans for Repayment is Hazardous.

Five rules designed to convince farmers that there is no magic about credit are set down in farmers' bulletin 593, "How to Use Farm Credit," which the United States department of agriculture has just published. Unless the farmer who is thinking of borrowing money fully understands these rules and is willing to be guided by them, the government's advice to him is: don't. As it is, there are probably almost at many farmers in this country who are suffering from too much as from too little credit.

Of these rules the three most important are:

1. Make sure that the purpose for which the borrowed money is to be used will produce a return greater than needed to pay the debt.

2. The length of time the debt is to run should have a close relation to the productive life of the improvement for which the money is borrowed.

3. Provision should be made in long-time loans for the gradual reduction of the principal.

The first rule is of course the key to the wise use of credit. Between borrowing money to spend on one's self and borrowing money to buy equipment of some sort with which to make more money there is all the difference between folly and foresight, extravagance and thrift. If the money is borrowed for a wise purpose it will produce enough to pay back principal and interest and leave a fair margin of profit for the borrower into the bargain. If it is borrowed for a foolish purpose it will produce nothing and consequently there will be nothing with which to repay the loan. From this point of view it matters comparatively little whether the interest be high or low. It is the repayment of the principal that is the chief difficulty.

Rules two and three deal with the most satisfactory way of repayment. Underneath them both is the same principle: The loan must be repaid with the money it earns itself. For example, if the money is used to buy a machine that will last ten years, the machine must earn enough in that time to pay for itself or it never will. The loan, therefore, should be entirely repaid before the ten years are up or the farmer will lose money on the transaction, paying out interest for no benefit in return. On the other hand, if too early a date is set for repayment, the machine will not have had sufficient opportunity to make the requisite money and the borrower may have difficulty in raising it elsewhere. Rule three provides for some of amortization, the system by which the principal is repaid in installments, so that the amount of the loan is continually diminishing and in consequence the interest charges also. Such a system is quite feasible when the loan is really productive, when it returns to the borrower a definite revenue each year. Tables showing the payments required to pay off principal and interest in varying periods of time are appended to the bulletin and are recommended to the serious consideration of everyone who contemplates borrowing money. The bulletin also advises the farmer to secure the lowest possible interest. At first sight this seems too obvious to be worth mentioning. Of course the interest should be as small as possible. Everybody knows that—except the lender. But if the other rules are observed, if the borrower manages his financial affairs soundly, he will be surprised to find how much easier it is to obtain favorable terms. The right kind of lender does not want to foreclose mortgages, he wants his money back with a fair profit, like any other merchant. For money that is borrowed wisely, for money that is sure to be repaid, he charges low interest.

This in fact is why the government has published these rules for borrowers. It is not so much a matter of driving a shrewd bargain as it is of observing a few fundamental principles which alone can make credit a blessing and not a curse.

The "Column of Progress," which will stand north of the Court of the Universe, between the court and the bay of San Francisco, at the Panama-Pacific international exposition, will be the collaborative work of Mr. Isadore Konti, who will execute the frieze of the pedestal, and Mr. H. A. MacNeil, who has modeled the magnificent group "The Adventurous Bowman," which is to crown the column. Mr. Konti's frieze will typify the progress of the nations through the ages.

A LIBERAL EDUCATION.

Written by Maude T. Stewart and read before Mirror Lake Grange, No. 393 at Berlin, Vt., on March 6.

"WHAT kind of an education does the average girl of today need?"

When our lecturer gave me this subject, I feel he fully realized that I was the girl of yesterday and doing the work of today. I must realize the education I ought to have had, and that which the girl of today must have. As doubtless you all know, this question can be answered in a very few words, namely: Make up your mind as to the kind of work you wish to do, then give yourself the best training possible; and as our State Master Cady, while speaking at Randolph Center, Vt., said, "Whatever line of work you choose to do, do your best. Be first, do not be content to occupy the second place."

Do not narrow your education, for if you know all you possibly can, there may come a day in which you feel you do not know anything, or at least, not half enough. By this I mean, let even a child question you as to the whys and wherefores of everything, and you may answer as did the teacher when asked by one of her pupils why the water in the ocean is salt, "Because of the codfish which live in it." Of course on a second thought, the answer would have been different, but are we always given the second chance? No. Thus we must always be prepared.

I have so often heard people say, I do not need to know this or that, for it is not in my line of work; or pupils say, I do not need to study this subject or that, for in the work I shall do I will never need it. You cannot always tell. Perhaps you may not make a success of the work which you have always wanted to do. Then you must try something else and the good, broad education will give you, using the old-time expression, "something to fall back on."

So in closing let me repeat, no matter what your work may be, first receive a good education, and aim high.—National Grange Monthly.

IMPROVING THE CROP.

[redacted] R. Leland
[redacted] Pomona
[redacted] and Plant
Improvement.

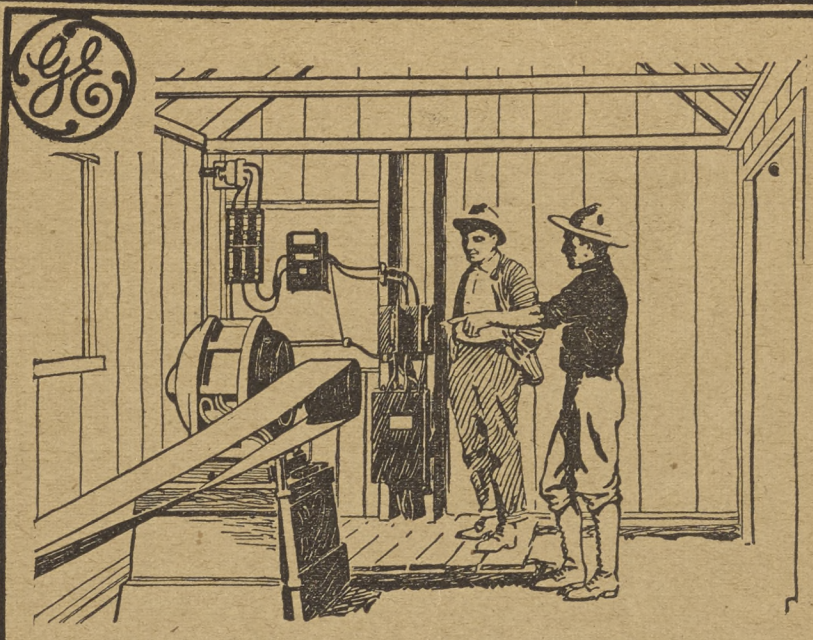
"SEED and Plant Improvement" was the subject of C. R. Leland. He gave figures from the last census, showing the increase in city population to be twice as great as the increase of country population in the past ten years. That already two-thirds of the nation's people are non-producers of food supplies. This causes an increasing demand from year to year for farm products. Insect pests and disease are becoming each year more numerous, until the time has come when we must produce more crops and care for them better than in the past.

Mr. Leland defined improved seed as: (a) Seed producing a crop of more than average quantity; (b) seed producing a crop of more than average quality; (c) seed having high germination and purity test; (d) seed which is more disease-resistant than the average; (e) seed more early maturing than the average.

How to Improve Crops—The best way for the average farmer to improve his crop and seed is by securing a pure strain or variety. Employing the best methods of cultivation and fertilization. Field selection of seed, that we may observe the mother plant and conditions under which it grew. Care to prevent mixing of varieties. Careful grading of all seed. The extra cost of this work is taken up by (a) the larger amount for market and greater feeding value; (b) by securing special markets and seed markets.

The greater interest taken in his work by a man trying to do a little better each year than the past, is an added incentive to try just a little harder each year than before. The co-operative plans for certified seed by the department of agriculture and the Maine Seed Improvement association were outlined and explained.

Opposed to Whiskey—Toga County Pomona Grange, No. 30, of Pennsylvania, representing 5000 Patrons, adopted strong resolutions against the re-election of Boies Penrose to the United States senate. With all his other record—of omission and commission—the Pennsylvanian Patrons declare he is "a firm friend, aid and abettor of the cause of whiskey" and therefore deserves no support in the grange. It takes courage to face intrenched political power that way.—National Grange Monthly.



No sitting up nights to keep this motor running

The cot was taken out of the pump house when the old power used was replaced by a

G-E ELECTRIC MOTOR For RANCH AND FARM

As long as power is supplied this motor runs without attention other than refilling its reservoirs every month. This motor is belted to a 6-inch vertical pump on the ranch of Mr. Edward Gilman, at Edenvale, Cal. This is Mr. Gilman's second purchase of a G-E motor. He will tell anyone what he told us:

GENERAL ELECTRIC CO.,
San Francisco, Cal.

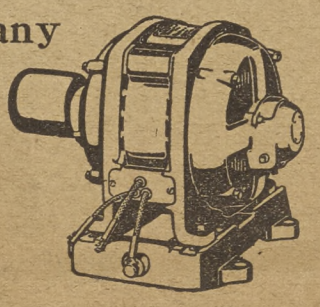
Gentlemen:—
I have used a General Electric motor to irrigate my farm and orchard for the past two years and have not had one moment's trouble or any complaints. I have left it running for hours without even thinking of it. I have unlimited confidence in the motor and can highly recommend it.
Yours very truly, (signed) ED. GILMAN.

Write today for our interesting free booklet about ranching and farming with electricity.

General Electric Company
Los Angeles Office:
124 West 4th Street
San Francisco Office:
Rialto Building

The General Electric Company will gladly answer all questions relating to the use of electric power for ranch and market garden irrigation.

Address nearest office. 4958



Encourage Industrial Work—Every grange should try to do something to encourage the children in the local schools to become interested in some sort of industrial work. The school credit for home work system is very effective and the forming of corn clubs, tobato-growing and canning clubs or any other work that a number of school-children may agree upon. Besides improving the standing of the children as efficient pupils it means a distinct service to the art of agriculture and indirectly to the human race.

State Grange Anniversary—In September, 1889, the Washington State Grange was organized making this year a time for a silver jubilee celebration. Washington has been congenial ground for grange growth and, while at times the infestation of the membership with "weeds" and "tares" seemed serious, she now stands firm with a paid-up membership of 15,445. It is always gratifying to know that after many years of buffeting the conservative principles of the grange, win in the efforts for the betterment of the agriculturists and all mankind.

The Grange Gains Strength—The grange is being recognized as a power in all lines for promoting human welfare, and its influence is being felt in the various departments of state and nation. Inquiries are continually coming in from unorganized states, asking how to proceed to organize granges, so it looks as if within a few years the grange will have representatives from every state in the Union. A very general interest has been manifest from all sections of the country favoring a real farm credit law, one which will be for the interest of the farmer and not for the money lender. The grange should not relinquish its efforts along this line.—Oliver Wilson, in Grange Monthly.

Grangers discuss all questions which relate to the physical, educational and spiritual welfare of their members, although sectarian religion, party politics or any other "ism" that tends towards narrowness or selfishness and not for the greatest good for all is tabooed.

Sunnyvale Grange is interested in educational matters and has been discussing the system of school credits for home work.

WHAT A GRANGE DID.

About four years ago a grange was organized at the Missouri state college and its members were composed of teachers and pupils. It grew and flourished, disseminating Grange principles all over the state, for when a member leaves school and goes to his home community which has no Grange, his first desire and ambition is to call together his friends and neighbors and organize a Grange, as he has learned with other things at the college that the farmer needs a school right at his home, where he can discuss his mutual interests and keep abreast with the times. After this Grange at the college was organized, the enrollment at the college increased 227 per cent within two years, and it required 15 new men in the various departments to take care of this increase. There is little doubt that the Grange played an important part in securing this increase, for through its influence a greater interest was created in advanced agriculture.—Grange Review.

PROGRESS IN MARKETING.

There are thousands of skillful farmers who are poor salesmen and allow legitimate profits to slip away from them. This in some cases represents the difference between failure and success. With the development in our large cities of a steady cash demand at high prices for all kinds of produce, and a general improvement in transportation facilities, there is no good reason why the farmer should not realize greater returns on the commodities which he has to dispose of.

It may be possible to secure private customers who will pay full retail prices for farm products generally. It is feasible also to co-operate in shipping and selling these wares. A number of farmers may combine for the purpose of dividing the expense at both ends of the route. They will find it a comparatively easy task to obtain city customers who are willing to pay liberally for high-grade produce received fresh from first hands. It then becomes the business of the producers to raise the standard of their foods to the highest point and exact a sufficient price to insure a fair profit on the labor, time, investment and skill involved.

CHILDREN'S DEPARTMENT

Edited by KATHERINE DUNLAP CATHER

THE LETTER BOX.

Ukiah, Cal.

Dear Editor—I thought I would write to you. I read the letters and stories every Friday evening, and I think they are very good. I have three pets, two cats and a dog named Clyde. I am nine years old, and I am in the fourth grade. I live on a farm two miles north of Ukiah. I have a bicycle and I can ride pretty well. If I see this letter in the letter box I will write again. I hope to join the club. Yours truly,

GEO. GARNER.

Wheatville, Cal.

Dear Editor—This is the second time I wrote. School was out May 15, and four months' vacation. I have five old rabbits and six young ones. Two linnet nests are in our shed, one nest has birds in and the other has eggs in. There is an oriole nest in a cottonwood tree near our house. Yours truly,

MARVIN H. JESSEE.

Morgan Hill, Cal.

Dear Editor—I have been reading with much interest the letters in the children's department of the California Farm section. I was very much pleased to see that my friend, Miss Lois Horton had been made president of the Copo de Oro club. I am 11 years old and in the sixth grade. My brother and I ride to school together on our wheels every day. I live on a ranch a mile and a half from town. On our ranch we have a great many chickens. We have three thousand old ones and six thousand young ones. I have a rabbit and a pair of Golden Seabright bantams. We have numerous cats and one dog. Hoping that my letter will be worthy of being printed in your interesting sheet, I am with best wishes for the success of the Copo de Oro club, Your friend,

HELEN E. HIGGINS.

Folsom, Cal.

Dear Editor—I thought I would write a letter and send it with my story. This is my second letter and I would like to see it in print. Our school was out the eighth of May. I have many flowers and some large ferns. I have two baby kittens named Spunkie and Evangeline, and a little calf named Zipie. I go after the cattle and like to milk. There is a bird's nest at the corner of our house and I give them wheat and bread crumbs every day. I hope to see my letter and story in print. With love to the editor and all the readers, I am, yours sincerely,

MAY L. PRISSER.

Arlington, Cal.

Dear friend: This is my third letter. My second has not been published but I hope this one will be. I think that when our officers are elected it would be nice to vote on our pin or badges, on the color. I think the pin would be best don't you?

Yours,

AUDRAY SPACKMAN.

Smarsville, Yuba Co., Cal.

Dear editor: I have written once before. I have not seen my letter in print yet. I would also like to have a badge. I want to know what I will have to do to get one. I would like to know what is required to join and be a member of the Copa De Oro club. I hope to see this letter in print soon.

Yours truly,

MARGARET BOUTON.

Esparto, Cal.

Dear editor: I have been reading the letters and stories and I thought I would write. I am nine years old and in the third grade. I would like to know you children. I only have one sister, she is eight years old and in the second grade. I have no brothers. My mama is dead.

I have a pet cat. I live with my grandma in the winter and in the summer I live with papa. Do you enjoy the letters? I do. Well I must close.

Yours truly,

EDITH WILCOX.

Fresno, Cal.

Dear editor: I have never written a letter before but I hope mine will be published. I am 13 years of age and I am in the seventh grade. I go to the Washington grammar school.

I have two pet cats one is a plain tabby cat, but the other is a beautiful white Angora cat. He is shedding now so his fur isn't very long. But he has quite a ruff about his neck even now. He is only nine months old and in mid-winter his tail measured nine inches across and 14 inches long. His name is Frisky and it suits him just fine. The other cat's name is Nuggets. He is very large and fat like Frisky.

Hoping my letter will be published I remain

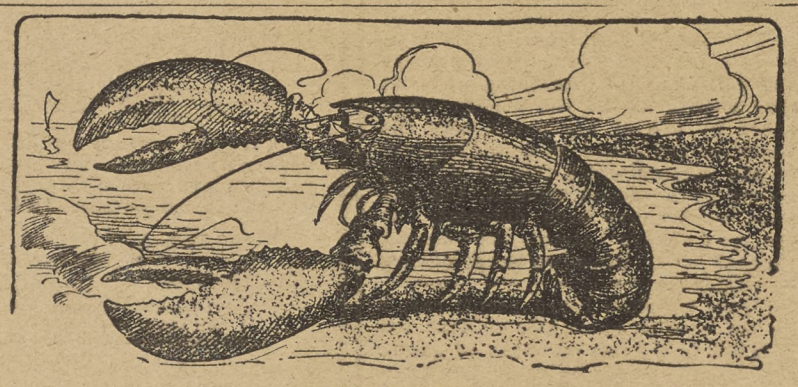
Yours truly,

MERIDA PINKLEY.

Hornbrook, Cal.

Dear Editor: I guess you thought I was never going to write about the pin. Well I think a four-leaf clover would be a nice pin. I have four little kittens with their eyes just open. We have three little chickens and a few big hens besides. I think the letters of the boys and girls are very interesting and I like to read them. I think it is nice to have a president and a vice president. I was out playing with one of my friends today and broke my parasol. We have strawberries to eat now. When school was out I passed for the fourth grade. I am working a sofa cushion. It has a big bunch of violets tied with a ribbon and the words, "Only a Breath of Violets." I am working a centerpiece of holly. Well, I guess I had better quit for now. I do hope this letter will be in print. Your friend,

THELMA PIERPONT.



THE LOBSTER.

The lobster is a crusty chap;
His claws are several inches;
And if he'll grab you by the toe
You'll know how hard he pinches.

His color's green when he's alive,
But after he is dead
And cooked upon the stove, you know,
He turns a brilliant red.

When he is broiled within his shell
He's mighty good to eat;
And when he's served in salad form
He's quite a dainty treat.

Jenner, Cal.

Dear Editor: I read the children's department every week and I enjoy it very much. I have read letters that some of my little friends have written so I thought I would write too.

I think that Copa de Oro is a very nice name for a club. If this letter is printed, I will write again. Your friend,

RUTH ERICKSON.

Newman, Cal.

Dear Editor: I thought I would write a few lines. I hope they will be in print next Sunday. I have two pets. I have a cat named Blacky and a dog named Jerry. I have three brothers; two of my brothers are older than I and one younger. I am 9 years old, and in the fifth grade. I go to the Newman school. I guess I will close. Your friend,

ELLIS NEWSOME.

P. S. This is the first time I have written, so I hope to see it in print.

E. N.

Los Gatos.

Dear Editor: My mother and I read the Children's Page every Sunday afternoon. I always read all the letters and enjoy them. I have never written to you before but have often talked about it.

A lady gave me two little rabbits and they are growing so fast. They are always hungry. I feed them grain, wheat, lettuce, carrots and beets.

I guess I will close this letter. Yours truly, CLYDE McKINNEY.

Walla Walla, Wash.

Dear Editor: I am 11 years old and am in the fifth grade. I go to the Lincoln school in Walla Walla, Wash.

I have two goldfish and a canary bird. The bird's name is Dicky and it sings beautiful. I live next door to the sister of the editor of the Plumas Bulletin. I hope to see my letter in the paper next time it comes. Yours sincerely, MABEL A. McCABE.

Visalia, Cal.

Dear Editor: I am a little girl 10 years old. I live in the country on a big ranch. My papa is foreman. We have lots of nice fruit on the ranch, and we are going to have a big crop of peaches and prunes. Papa gets your paper every week, and I have been reading your stories in the children's department. I have a little dog and he is yellow. I call him Trixy. I hope to see this in print. Your friend,

ESTHER HOGAN.

Watsonville, Cal.

Dear Editor: I am interested in the Copo do Oro club and I enjoy reading the children's letters. I am 12 years old and have just finished the fifth grade. Our school closed Friday, the 22d. We went down to the beach where we played games and spoke pieces.

This is the first letter I have ever written and hope it will escape the waste basket. Your friend,

DOROTHY MERRIMAN.

Oceano, Calif.

Dear Editor—I read the Copo de Oro club letters and enjoy them very much. I have a pet kitten, his name is Tabby. Today he climbed the windmill. He climbs trees, too. I go to the Oceano school. We have vacation now. I am 11 years old and am in the sixth grade. If I see this letter published I will write again. Yours truly,

IRMA A. MONNIN.

Hornbrook, Cal.

Dear Editor—This is my first letter. I am 11 years old. I have three sisters but no brothers. I saw a letter from one of my schoolmates in the paper. She is in my grade. I hope this letter will be published. Yours very truly,

GRACE BRAY.

Dear Ed[illegible] much. Ple[illegible] can get one. [illegible] how much they cost. Yours [illegible]

IVY WHARTON.

Imperial, Cal.

Dear Editor—We have been a reader of this paper for a long time. I have read and enjoyed the letters of the Copo de Oro club children, and I sincerely hope mine shall find room to be published. It is my first. I have one brother, named Dudley, and I have two sisters named Cora and Ruth. For pets I have one cat, a dog, and one horse. I would like to see my name on the honor roll. Yours truly,

GERTRUDE RAGSDALE.

Willits, Cal.

Dear Editor—I have often read the children's letters. I found them very interesting. I live seven miles from Willits on a farm at a sawmill. A lot of us girls go swimming in the millpond. I have a Collie dog named Alice, she is awful fat. I go to school at the Two Rock district. I have no more to say this time so I will close. Hoping to see this again. Your friend,

GRACE KANN.

Turlock, Cal.

Dear Editor—I have read this children's department and I enjoy it very much. My birthday is July 25. When fruit comes I cut peaches. I am 10 years old. I go to church school. I play and have lots of fun. I raise pigeons. I go in swimming and I bought a boat. I go out riding. I hope this will be published. Yours truly,

ALBEN NORDIEN.

Keyes, Cal.

Dear Editor—I haven't written for a long time so I guess I will write. I am surprised that I should be director of the club. Though I don't know what to do and I should be very thankful if you would explain. I am sure that I am very glad that we have gotten a badge for I think that it will do good to the club. I know of one more member that will join soon. Her name is Alice Wilhing and she is a very nice girl. Maybe some of her brothers and sisters will write too. So if some of the girls and boys would ask some of their friends to write I am sure the faster our letter box grows the quicker the club will gather together. By some of Lois Hortan's letters and some of the others I can tell just the way it would seem if we were friends. There are many children at the Keyes school and the examinations are going to be next week. But there ar few that seem to think that they won't get through. Yours truly, EDNA FOSTER.

Oceano, Cal.

Dear Editor—We take the "California Farmer section" and I have been reading the children's department every week, I am very much interested in the club and would like to become a member. Would you please send me a club pin? I will close, hoping this will be printed. Yours truly,

FLORENCE BARDIN.

San Jose, Cal.

Dear Editor—I saw my first letter in print so I thought I would write again I was very much pleased with it. There is a very large honor roll now. I think it would be fine to have a pin for our club. If we have pins, how will they be sent to us or how will we get them? Have you decided what we will have for the emblem? I am very much interested in the club and read the letters every Sunday. We had a garden party at the Hawthorne school last Friday. We had a very nice program. The high seventh and low eighth rented a lot and planted it in vegetables. In the middle of the garden they had a pretty little booth in which they sold candy and punch. The school was all decorated. There was a large crowd there. There were drills, dances, songs and Maypole. I will now close, hoping to see my second letter in print. Sincerely,

EDNA McCORMIC.

Dorris, Cal.

Dear Editor—I have been reading the Copo de Oro club for some time. Please tell me the meaning of Copo de Oro. I am nine years old and in the fourth grade. I have a little sister and a big brother. I have a pony named Baldy. I like to ride him. I will ride him when school starts. If I see this in print I will write again.

VERNA DORRIS.

Copo De Oro is Spanish and means cup of gold in English.—Editor.

Dear Editor—I have written twice and will now write my third letter. I was pleased to see my letters both printed. I would like to have a badge very much. I am going to write a letter about the picture. I would like to see my name on the honor roll very much. Yours truly,

ANNIE SHEPPARD.

Livingston, Cal.

Dear Editor—I saw my letter in print, so I thought I would write again. The school will be out Friday, June 5. I and my playmate went up to the school belfry. We have lots of fun. I think it is very nice to have a club pin. would like to have one. If I see this letter in print I will write again. Hope it will be published. Your reader,

ROSE NAKA.

Taylorsville, Cal.

Dear Editor—I have been wanting to write for some time, but haven't had time as I have been going to school. I live on a farm four miles from Taylorsville. I have two pets, a cat and dog. The cat is Tom and the dog is Dolly. I have six sisters and two brothers. I hope to see this letter printed. Yours truly,

THELMA PATTAN.

La Grand, Cal.

Dear Editor—I have been wanting to join the Copo de Oro club for a long time, but I have never written. I am ten years old and in the sixth grade. I have a brother that will start to high school next year and a sister that will start to grammar school. I live in the country. I like the country much better than the city. I will write again and hope this will be published. Yours very truly,

VESTA CUNNINGHAM.

Campbell, Cal.

Dear Editor—I am ten years old and I go to the San Lomas school, I am in the sixth grade at school. I have seen several letters from people I know so I thought I would write. Sincerely yours, ISABELLE COLLINS.

Berry Creek, Cal.

Dear Editor—I am very much interested in the letters from the boys and girls. I love to read them. I live in the country. I am 12 years old and in the eighth grade. I have many pets. I have four sisters and three brothers. I go to the Berry Creek school. Hoping to see this letter published. Sincerely yours, RUTH McCLUNG.

Colusa, Cal.

Dear Editor—I have been reading the letters and stories of the children's department and like them very much. I am ten years old and will be in the fifth grade when school begins. I have a bicycle and a horse to ride, and also I have some white rabbits. I live on a farm and like it better than in town. I hope my letter will be printed so my dad will see it. Yours truly,

JAMES PAUL HERYFORD.

EDUCATIONAL

AFTER COLLEGE—WHAT?

A Girl With College Training May Lead Her Home People to Better Things.

By Our Country Contributor.

IN a recent issue of The California Farmer the suggestion was made that "every graduate of a state agricultural college should consider himself responsible for the social and agricultural conditions of his neighborhood, and to work for its upbuilding."

An excellent suggestion, but why not include the college girl graduates and, because of their fitness for such work, let them take an active part in everything that will tend toward the upbuilding of the town in which they live.

The best thing a college girl can do for her home town is to live in it, be happy and contented in it and use her influence toward making it a model community. The work should not be attempted in a spirit of condescension, as if her fellow-beings were on a lower plane and sadly in need of enlightenment, but with sincerity and tact and with the purpose of working shoulder to shoulder with them, for the common good.

The college girl who has the ability can do much for the

Musical Education of the Community.

The village or country church needs a choir leader; the clubs need help with their musical programs; the children need training for chorus work both for school and church entertainments. This is a broad field for the girl of musical taste and ability; and by creating a desire for good music in the community, she will do much toward accomplishing her purpose.

The Public Library.

In a literary way the college-bred woman may make herself invaluable. Her experience in choosing (and using) books will serve her well in starting a public library or helping to increase the usefulness of one already established. A library is the center for the intellectual life of a community and the college girl may lend valuable assistance in creating a desire for good magazines and books, then in helping raise money to make this desire possible.

Good books are of little value unless they are used. The tactful girl may suggest reference books to the minister, to club members or to high school students—all of whom must at times prepare essays and papers. She must study the individual tastes and needs of the people around her in order to persuade them to read the best books.

If She Loves Beauty.

About once a year public pride needs to be thoroughly aroused. If there is no civic club in her town, the college girl may wish to form a village improvement club with the sole object of beautifying the town—its homes, its streets and surroundings. The planting of shade trees and flowers, the proper disposal of garbage and refuse, the watering of streets and the problem of the vacant lot will require long and patient effort for their accomplishment; but what a worthy work it is!

College Training Gives a Broader Viewpoint.

The college girl returning home after an absence of several years can perhaps see the needs of her community more clearly than those who, by continuously residing there, have become indifferent to existing conditions. Her college-trained mind has given her a broader outlook so that she can successfully cope with these problems. And the college woman who possesses tact and the "desire to do" will become a great power for good in her locality.

Let her not fret nor repine because of the seemingly limited field for her endeavors, but rather rejoice that her four years of college work have so ably fitted her for a life of usefulness and service for those she loves. This is a work worth while.

"Have you a lawyer?" the court inquired.

"No, sar," was the reply.

"Can't you get one?" was asked him.

"No, sah."

"Don't you want me to appoint one to defend you?" asked the court.

"No, sah," answered the old man. "I jes' t'o't I'd leabe my case to de ign'ance ob de co't!"

The Interborough Rapid Transit subway system in New York city has carried about 2,198,000,000 passengers in the last nine years without a fatal accident to a single passenger.

A submarine cable will carry electrical power from Sweden to Denmark. The electricity will be generated by the fall of the Lagan river and the underwater cable will carry the power to the island of Zeeland where it will be used in manufacturing.

LIGHTING THE PASSENGER TRAIN.

How the Moving Train Is Lighted by Electricity—Difficulties Which the Engineers Have Overcome in Lighting Trains and the Various Systems Now in Use.

THE electrically-lighted passenger train is no novelty on any first-class road but there are few passengers who can tell how the electric current is produced which keeps the electric lamps burning regardless of whether the train is in motion or not.

First-class passenger trains are not only lighted by electricity but the current has been adapted to drive electric fans during the hot summer months and, in one or two instances, it is also used in the kitchen of the dining-car where the food is cooked over the invisible fires of electricity.

In lighting a passenger train provision must be made for supplying the current whether or not the train is in motion. To accomplish this a storage battery is generally installed in connection with the electrical generator. There are three systems in use for train lighting. The first is the straight storage system which consists of a storage battery large enough to store sufficient current for the needs of the train in route between terminals. Of course this storage battery has to be charged before each trip. The lamps are lighted by merely turning the switch which draws on the current stored in the battery.

In the second system a small generator, is geared or belted to the wheels of one of the cars. This generator supplies electricity directly to the lamps and also to an auxiliary storage battery which keeps the lamps burning when the train is standing in stations or yards. This system is rather more complicated than the first but has the added advantage that the storage battery does not have to be charged at the terminals.

In the third system a small generator driven by a Curtis steam turbine engine, which secures steam from the locomotive boiler, is used to supply the current. This tiny turbo-generator may be mounted on top of the locomotive boiler or in one corner of [redacted] but very [redacted] battery [redacted] this set [redacted] even if the locomotive is uncoupled and removed.

The advantage of electric lights for passenger trains are many. First of all they eliminate the dangerous gas tanks and gas lighting systems, and the old oil lamps, which usually set fire to the train in case of wreck. The electric lamps do not overheat the car during the warm days of summer and they do not vitiate the air of the coaches making traveling uncomfortable for want of good ventilation.

COMMUNITY MARKETING.

Co-operation in marketing and in buying is, we believe, essential to the economical distribution of products. Large quantities of uniformly good products can be sold much more advantageously than can smaller quantities of products, each sample of which may be good in itself, but which when brought together are not uniform. When every farm was manufacturing its own butter, and each of the hundred or more farmers in the community was trying to sell butter of a different quality, the price of butter was comparatively low. Where the manager of the creamery has at his disposal large quantities of a uniform product and can sell at the best possible price.

If the products of a community, such as grain, potatoes and livestock, can be made uniform by co-operation among the members of the community in production, and then these larger quantities of uniform products can be sold by one man, the same advantages that come to the large farmer, or have come to the dairy industry, can be secured in other enterprises on the farm. —A. D. Wilson, Director of Agricultural Extension and Farmers' Institutes, University Farm, St. Paul.

"Do you know," said Edith, "that young farmer tried to kiss me. He told me that he had never kissed any girl before."

"What did you tell him?" asked Flora.

"Why," replied Edith, "I told him I was no agricultural experiment station."

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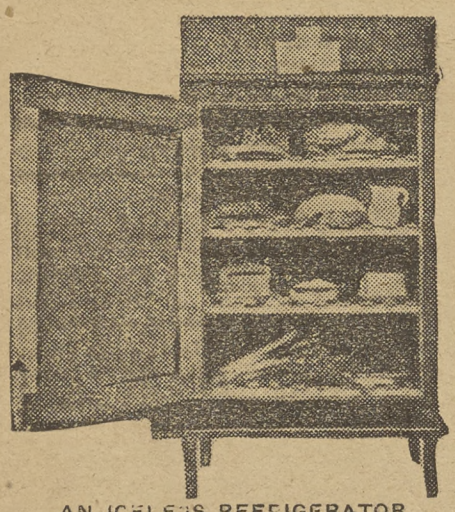

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HAROLD SOMERS, 150 DeKalb Ave., Brooklyn, N. Y.

THE HOUSEHOLD

BETTER HEALTH IS POSSIBLE.

Housewives Will Find Canned Vegetables and Fruits Healthful and Economical for Winter Use.

THE balanced ration of many Americans today is made up something as follows:

Bread, butter, eggs, meat and fish, potatoes, patent medicine laxatives.

Many Americans customarily suffer from one of the following complaints: Indigestion, constipation, rheumatism. A simple change of the daily menu might go a long way to remedy these ailments, according to the bureau of plant industry's specialist in charge of canning club work. This specialist recommends a change to a menu more in keeping with nature's plan, something as follows:

Bread, butter, fruit, vegetables, greens, meat, fish, eggs.

He recommends that every family provide a diet of fruit and vegetables for every day in the year. This would do much to eliminate the need for patent medicine laxatives. If every home kept on hand enough canned products so that there might be a can of fruits, a can of greens and a can of vegetables for every day during the winter, there would be little need for the laxatives now so regularly purchased from the corner drugstore. There would also be great economy in the substitution of an inexpensive food for more expensive ones.

Can More Fruit—More home canning, done at the proper season, would enable the average family always to have the proper quantity of canned products and would save an astonishing amount of food that goes to waste every year. It is estimated that over 50 per cent of all the vegetables, greens, fruit and berries that grow in this country go to waste and are actually lost to those who need them. This is simply because housewives have not learned to care for these surplus products efficiently and to make them available for the winter months by canning.

That home canning may reduce the cost of living is not generally appreciated. Even those who are accustomed to use a supply of canned goods in the winter do not realize that they sometimes pay transportation on goods from distant parts of the county when there is a surplus of the same product in their own vicinity during the summer months which might have been saved by home canning.

Save Transportation Charges—For example, a can of tomatoes is bought during the winter in certain districts in Colorado for 15 cents. Tomatoes are taken as an example, as this is one of the canned products which appers most frequently on the shelves of groceries throughout Colorado. This can was put up in Maryland. The people of the section where it was purchased live in an irrigated district, where there is always a surplus of tomatoes in summer, yet they pay transportation on vegetables from Maryland, when they might have put up a similar can during the season in their own district which would have cost about 5 cents. When one considers the number of cans used throughout the country which have been shipped great distances, one realizes the enormous saving a little intelligent home canning, however, should not seriously affect the business of commercial canning factories. There will always be plenty of people who have neither the time nor inclination to can their own products. More home canning, on the contrary, will accustom people more and more to using canned products in general.

Tested Recipes Furnished—Some practical experiments have been made in the laboratory of the bureau of plant industry [redacted] from w[redacted] ning is [redacted] laboratory [redacted] a "modern well-equipped laboratory." In fact, it does not like look a laboratory at all. It contains simply what every average home may have and is nothing more or less than an every-day kitchen. Here recipes that are applicable for every home have been thoroughly tested, and are gladly furnished to any housewife upon application.

Several kinds of simple canning outfits available for every home are described in the department of agriculture's Farmers' Bulletin No. 521. This also contains valuable suggestions on tomato canning, which are applicable to other canned goods, and includes definitions of canning terms which should be valuable to housewives not familiar with some of the more technical terms.

CORNBREAD AND JERSEY CREAM.

A Tested Recipe Which Is Much Used by the Owner of a Jersey Cow.

Good cornbread is relished by most people and there are also various grades of goodness in cornbread. To make good cornbread the meal must be good and so of all other ingredients that enter into its composition. Even then much depends on the art of the housewife, who prepares and bakes the bread.

The following recipe is a good one and will produce such delicious bread that there will be calls for more like it:

Three cups, three-quarters full buttermilk; four heaping tablespoonfuls, thick sour cream; add three level teaspoonfuls soda; one teaspoonful salt. Make a stiff batter with yellow cornmeal, and a little white flour.

Omelet and Strawberries — Stir creamed butter and sugar into crushed strawberries. Spread on egg omelet and fold. The amount of butter, sugar and strawberries may be regulated according to taste and size of family.

Society Sandwich—Delicious for afternoon teas, picnics and children's lunches. Chop fine 1 cup of seeded raisins together with 1 cup of nuts (preferably walnuts), mix with whipped cream or the white of an egg, (beaten), season with salt. Spread between slices of thinly butterel breal cut very thin.

COOL DISHES FOR HOT DAYS.

By a Modern Housekeeper.

THE warm days are coming—plenty of them—when we will want to serve cool foods. Some cool morning prepare a supply of

Lemonade Syrup.

Make and cook a syrup of five pounds granulated sugar and enough water to dissolve. When cool add the juice of a dozen lemons and strain into glass jars with close tops. A tablespoonful of this syrup, with crushed ice and water, makes a glass of delicious lemonade with only a moment's work.

Pineapple Ice

Is quickly made by mixing and cooking in a saucepan one and a half cups of sugar and three pints of water. After several minutes remove from the fire and add one tablespoonful gelatine (soaked in a little cold water), juice of three lemons and a can of grated pineapple. Strain and freeze. This makes three quarts of the ice.

Tutti-Fruti Ice.

Prepare and chop one quart of mixed fruits—such as stewed figs and dates, oranges and bananas, or any fruits that combine well. Add one cupful of cold water, sugar to taste and the whites of four eggs. Freeze.

Cantaloupe Frappe.

Select ripe cantaloupes and pass the pulp through a colander or potato ricer. To each pint of pulp add one-half cup sugar, one-fourth teaspoon salt, juice of one lemon and one teaspoon of gelatine (soaked in a little cold water, then dissolved by standing cup in hot water). Mix and freeze. If desired it may be served in the melon rinds, cut in the shape of baskets and chilled.

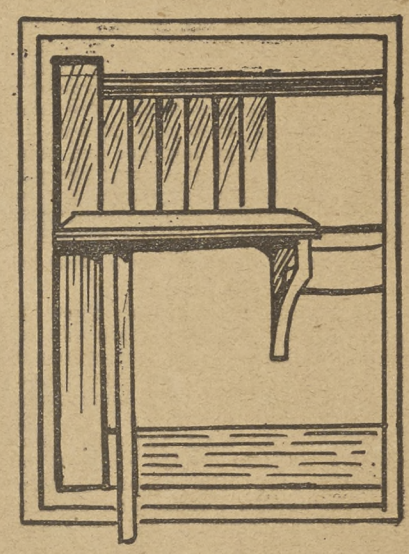
Pineapple Lemonade.

One quart of water and a pint of sugar are boiled together a few minutes, then cooled. Add the juice of a dozen lemons, a can of grated pineapple and two quarts cold water. Strain over a lump of ice.

Raspberry Shrub.

Two quarts of berries mashed and a pint of good vinegar. Let stand in a cool place over night, then strain as for jelly. Skim and seal in bottles. On a hot day, when a refreshing drink is wanted, use a tablespoonful of shrub to a glass of cold water. Add a little lemon juice if desired.

A Drain Board That Folds Up—Lacking a drainboard for the sink, an ordinary moulding or mixing-board may be used to advantage. To the left of the sink, nail to the wall a two-inch strip the length of the mixing-



A FOLDING DRAIN BOARD

board, letting one end of the strip rest on the edge of the sink, while the other end is slightly raised to make a slant.

Hinge the boards to this strip with hinges on top, so that when the board is not in use it may be lifted up against the wall and held in place by a hook. To the under side of the board, hinge a leg just long enough to reach the floor. When the board is raised the leg drops down and hangs flat against it taking up little room. —Country Contributor.

Instead of rolling out dough for dumplings make a stiff batter and drop them in from your stirring spoon.

By stretching the outer covering of your ironing-board on the bias all wrinkling when ironing will be avoided.

Be sure the mud scraper at the kitchen door is in good working order these days.

SARDINE AU VIN.

Put contents of can of Booth's soused sardines in a shallow baking dish, pour over this one pint of oysters and one pint of shrimps, season well and cover with wine. Bake 15 minutes.

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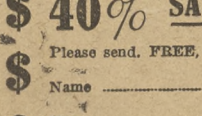

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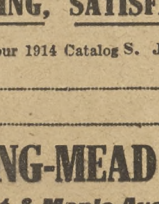

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USING THE SURPLUS.

Making a Profit From Products That Are Not Salable.

By Our Country Contributor.

CANNING the surplus fruits and vegetables on the ranch eliminates all worry of an over-stocked market and a consequent fall in price. One may dispose of the home-canned product at a good profit, after the summer's rush is over.

Apple Sauce and Beans—Last summer the Brown family from their surplus canned, for the market, two favorites seldom seen in stores—apple sauce and stringless green beans. And because of this scarcity, the two found ready sale. Glass jars were used for both. They are more sanitary, and people can see what they are buying, which is impossible with the tin can.

The cooked and sweetened apple sauce was put into the jars while hot and quickly sealed, but to be satisfactory, vegetables must be cooked in the can. So the wash-boilers were used on the stove in the tankhouse, for cooking the beans in the cans. A number of cans could be cooked at once.

Canning the Beans — While the morning was still cool, the beans were picked from the garden, prepared, salted and packed in the jars with a slice of fresh bacon in each jar; then filled to overflowing with cool water. Lids were clamped on and jars set in the boilers in cold water which reached the necks of the jars.

After coming to a boil the water was rapidly boiled four hours which was sufficient to cook the beans inside the glass cans. The cans were then lifted out and sealed tightly. They required no attention while cooking, except to occasionally replenish the fire. The beans and apple sauce found a ready sale at grocery stores at 25 cents per can.

This year the Browns have purchased, for a few dollars, a slightly-used canning outfit in readiness for cooking this year's surplus fruits and vegetables, on the ranch; and they believe they have discovered a "mortgage-raiser." They are making a splendid profit on something that would otherwise be wasted. The work is pleasant and may all be done out of doors if a stove is available.

Stuffed Raisins for Lunches and Teas—Blanch almonds. Select large Muscat raisins and take out seeds. Slit raisins slightly and insert almonds and draw skin around to cover opening.

THE HOUSEHOLD

SYSTEM IN HOUSEKEEPING.

N. M. K. of Texas Tells How to Simplify Her Housework in Michigan Farmer.

MY plan for simplifying housework in family of six, four children under 11 years, doing family sewing, caring for chickens and occasionally helping in the garden, is somewhat as follows:

Monday—Straighten down stairs, bake anything necessary to tide over wash day, change beds, turn mattresses, air bedding and clean room, sort clothes and put first white clothes to soak in clear water. In afternoon if there is time, I try to cut out or plan out, garments to be made during the week.

Tuesday—Wash, scrub floors, sort and fold clothes; sheets, towels, underwear, stockings and nightgowns folded neatly and put away.

Wednesday—As myironings are large I sprinkle about half the amount to be ironed, and usually bake bread and beans, or anything requiring long cooking, and can do the half of ironing during morning. In afternoon I mend any article that needs a stitch.

Thursday is very much like Wednesday, only less baking, consequently more time for reading or sewing, or, as I plan to do when possible, go to missionary meeting from 3 to 4 p. m.

Friday—Clean rugs, silver or any other job that needs the looking after. Sometimes it's the refrigerator, and sometimes the chicken coops, if the good man has been unusually busy.

Saturday—Clean the kitchen and porches, baking for Sunday. I usually get everything planned for Sunday as all go to church. I like to have the afternoon to finish up odd jobs, so as to have "orderly feeling" on Sunday morning.

After Monday morning the 10-year-old daughter takes charge of upstairs and her pride is to have it "fit for inspection."

We have no gasoline engine so "the man" has harnessed the grindstone to the churn and each morning son treads pedal and brings the butter.

On Tuesday the children wash the dishes and do what sweeping and dusting is necessary. They seem to think [illegible] job, so I [illegible] when I felt the same wa[illegible]et them do other tasks whic[illegible]ually helpful and cheerfully accomplished. What is sweeter to a mother's ear than a child [illegible]ging at his task?

This plan does not fill any day so full but that a ride can be taken or an outing, without serious inconvenience; all hands soon dispatch necessary part, and then what fun!

LOGANBERRY RECIPES.

The following Loganberry recipes were furnished to the Horticultural Department by Miss Ava B. Milam of the Domestic Science Department:

Gelatine Desserts.

Loganberry Bavarian Cream—
One tablespoon granulated gelatine.
One-fourth cup cold water.
One-half cup powdered sugar.
Whip from three and one-half cups cream.
Berries to line mold.
One-third cup scalded cream.
Line a mold with large, fresh Loganberries and fill with the following mixture:
Soak gelatine in cold water; dissolve in scalded cream; strain into a bowl, and add sugar. Set bowl in pan of ice water and stir constantly until it begins to thicken; then fold in whip from cream, adding one-third at a time. Turn in mixture and chill.

Loganberry Trifle—
Two tablespoons granulated gelatine.
One-half cup cold water.
One-half cup boiling water.
Whip from three and one-half cups cream.
One cup sugar.
One cup Loganberry juice.
One tablespoon lemon juice.
Make same as Loganberry Bavarian Cream and mold.

Loganberry Sponge—
One and one-third tablespoons granulated gelatine.
One-third cup cold water.
One-third cup boiling water.
Whip from three cups cream.
One cup sugar.
One tablespoon lemon juice.
One cup Loganberry juice.
Whites of three eggs.
Soak gelatine in cold water; dissolve in boiling water; strain and add sugar, lemon juice and Loganberry juice. Chill in pan of ice-water; when quite thick beat with wire spoon or Dover beater until frothy; then add whites of eggs beaten stiff, and fold in cream.
Line a mold with Loganberries, turn in mixture, and chill.

Puddings.

Snow-Balls—
One-half cup butter.
One cup sugar.
One-half cup milk.
Whites of four eggs.
Two and one-fourth cups flour.
Three and one-half teaspoons baking powder.
Cream the butter, add sugar gradually, milk and flour mixed and sifted with baking powder; then add the whites of eggs beaten stiff. Steam 35 minutes in buttered cups, serve with preserved fruit, quince marmalade or strawberry or Loganberry sauce.

Loganberry Sauce—
One-third cup butter.
Two-thirds cup Loganberries.
One and one-half cups powdered sugar.
White of one egg.
Cream the butter, add sugar gradually, egg beaten until stiff and Loganberries. Beat until fruit is mashed.

Pies.

Loganberry Pie, No. 1—
One cup sugar.
One cup hot Loganberry juice.
Two tablespoons corn starch.
Two egg yolks.
One teaspoon butter.
Two tablespoons flour.
Mix corn starch, flour and sugar, add hot juice, stirring constantly. Cook two minutes. Add butter and egg yolks and cook until thickened. Line bottom of pie plate with paste and bake. When browned, remove from oven and place inside of plate. Fill with the mixture which has been cooled, and cover with meringue, and brown.

Meringue.
Whites of two eggs. Two tablespoons sugar. Beat whites until stiff; add sugar gradually, and continue beating. Place on top of pie.

Plain Pastry.
One cup of flour. Three tablespoons of butter or lard. One-fourth teaspoon of salt; cold water to moisten, about one and one-half tablespoons. Add salt to flour and cut fat into mixture. Use just enough water to make particles adhere together. Roll very thin, handling as little as possible.

Loganberry Pie No. 2—
Line plate with paste rolled until thin. Fill with berries which have been picked over and washed, or with canned berries. Add sugar. (The amount needed will depend upon the size of pie, ripeness and acidity of the berries, so this must be determined by tasting.) Arrange six strips of pastry across the top, cut same widths as rim; put on upper rim. Bake 30 minutes in a moderate oven.

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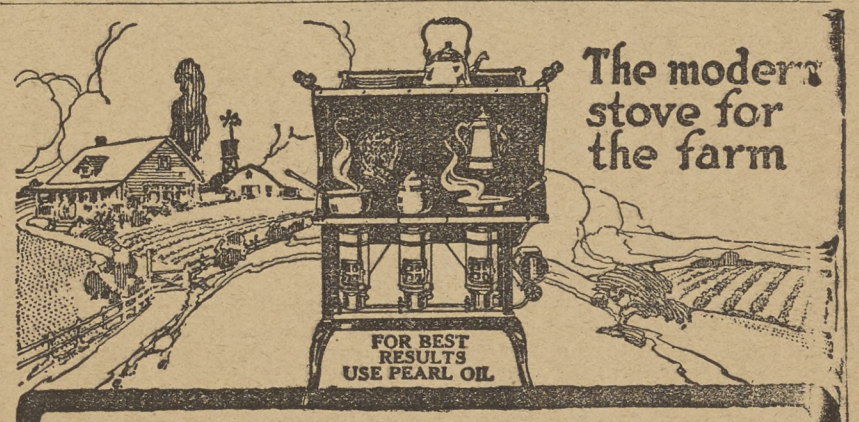

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Our Weekly Fashion Service for the Home Dressmaker

A Glimpse at the Early Fall Fashions

A Hint of What the Coming Season May Bring in Styles and Materials..

IT seems like rushing the season to talk of fall fashions before one has had one's summer vacation, does it not? Yet already the importations of fall fashions are being received, and one might as well listen to the "latest ideas" as exemplified in these forerunners of "what is to be."

Broadcloth is to be a prime favorite in material for fall costumes, if one may credit indications, and as a sketch of one of these very new costumes may prove interesting as showing the tendencies of designers. I shall describe one of the "very latest" suits just unpacked in in an elusive shop hereabouts.

Pearl gray broadcloth and panne velvet in a shade of blue known this season as "ceil" or sky-color, was the dainty herald of things-to-be. The blue, however, was not the usual sky-blue, but the deep, soft blue of the sky after sunset. The coat is embroidered in a Russian cross-stitch design in floss silk of the same shade of blue.

The rather short, full underskirt is of the blue velvet; the Russian tunic, which comes to a point in front, is shirred on the hips under a piping of the velvet. At the back the tunic falls in long, loose folds. The coat, which fastens with a single button, is extremely cut-away in front, where it is embroidered with the blue silk. It falls in three diagonal folds at each side and the straight back is embroidered from the waist down. Silver clasps fasten the very high collar, which has a flap of velvet falling over it at the back. With this suit is worn one of the new sailor hats of white velour.

Lingerie to Match Gown.

A fad of the season is to have the lingerie match the gown in color. If one wears a frock of peacock blue, then everything underneath must match, if not in shade, at least in hue. The only exception is with the favorite black and white—fashion does not demand black underwear to accompany it.

Or if milady objects to the solid color there is a variation of that idea in a recently inaugurated style by one of the Paris designers. On a background are stripes or checks of a delicate hue, pink or lavender, just enough color to take away from the all-white effect.

And still another "style" for lingerie is the "tailored," designed to wear with street costumes. In direct contrast to the filmy fluffiness of milady's usual undergarb are the severely plain white garments quite devoid of trimming except for a hemstitched border of delicate color or of the fabric of the garment itself.

A pretty style is a set of dainty white batiste narrowly hemmed with colored batiste in a delicate shade, and below a narrow line of hand-embroidery done in white and colored threads. Narrow ribbons matching the embroidery are used to fasten the garments.

Glove silk is a new fabric for the close clinging combinations, coming in white and delicate colors. It resembles silk jersey, and, like it, clings closely to the figure. Net lace, chiffon or chiffon cloth are also much-used fabrics on dainty undergarments.

Petticoats are growing more and more thin, shadow lace or plain net being particularly popular. This latter, particularly intended for wear with the tango gown, is cut perfectly straight and measures two yards at the hem, and is trimmed with a cluster of tucks above a two-inch frill of net.

Among the serviceable skirts for summer wear, especially under sheer gowns, is the tailored pique or linen petticoat with a circular flounce slashed at the seams and finished in hand-embroidered scalloping. Or, if you desire something daintier in the line of trimming, a wide flounce of a shadow or Valenciennes lace might be laid over the scalloped flounce.

Oh, do you remember the old-fashioned dress of grandmother's with its odd little scalloped edge bound with colored linen. Well, Paris is going wild over the quaint frocks which so closely resemble these lavender-scented relics of a generation ago.

Another of the revived fashions is the cravat of narrow velvet ribbon or moire which now adorns some of the latest frocks and blouses. The separate blouses of the moment, by the way, are of pale blue, pink, mauve or yellow sheer linen, with collar and cuffs of white organdie, pique or linen.

Waistcoats of white pique, fastened with buttons of white pearl, are fashionable. They are belted about the waist. Bead necklaces grow in popularity and almost every costume has a strand to complete it. Long strands of beads, sometimes reaching far below the knees, often supply the only bit of contrasting color used on a costume.

Costume 5677 With Cascade Skirt — Costume 5526 — Costume 5598 — Bolero Waist 5580 Tunic or Pouf Skirt 5535

5677—Cascade or burnoose drapings are all the rage for afternoon wear, on dresses of taffeta, charmeuse, foulard and crepe, though the crispness of taffeta seems to bring out the bouffant effect better than other fabrics. The cascade effect is arranged attractively on the side of the skirt, and though it sounds extreme it is really quite simple. Just some of the skirt material caught together at the side and then left to fall in graceful jabot-like drapery. No[illegible] long raglan sleeves are perforated for short length. The [illegible]orn in the fashionable V-effect, or it may be filled in with a [illegible]anding collar of sheer net. The two-piece skirt seamed front a[illegible] attached at high waistline, and is about 1¼ yards wide four inches ab[illegible]e lower edge. Costume No. 5677, sizes 14, 16, 18 and 20 years. The 16-year size requires 3 3-4 yards 40-inch material, with 1 yard 36-inch Roman stripe silk. Price, 15 cents.

5526—A distinctly feminized adaptation of the masculine pocket is featured on this frock of maize cotton corduroy, with smartly-shaped collar and turn-back cuffs of white organdy, hemstitched, or with a narrow binding of yellow linen to match the dress. There is no lining, and the long sleeves of the pattern are perforated for the short length shown. Allowance is made for high and open neck, and the three-piece skirt is joined at raised waistline. The width at lower edge is about 1 1-2 yard. Costume No. 5526, sizes 14, 16, 18 and 20 years. The 16-year size requires 3 3-4 yards 36-inch material, with 3-8 yard organdy. Price, 15 cents.

5598—Draping is very effective in soft silks, voile and crepe, and for this pretty frock, one of the new plaided voiles could be chosen in rose, dull blue and white, with Japanese collar, cuffs and belt of white crepe de chine. No lining is used for the drop-shoulder blouse which can be made with high or open neck, and long or short sleeves. At high waistline the four-piece skirt, which is about 1 1-2 yard wide at lower edge, is attached. Costume No. 5598, sizes 14, 16, 18 and 20 years. The 16-year size requires 4 7-8 yards 36-inch material. Price, 15 cents.

5580-5535—Favor is about equally divided between the tunic and the pouf for young girls, so here is a dress which gives a choice of either, as the tunic can be draped up to form a pouf. The waist is very pretty with its bolero suggestion. It is made over a lining having high, round or open neck, and one-piece sleeves which may be lengthened by puff sleeves. There are also sleeves cut in one with the side-front and side-back of blouse, and the bolero section extends around, forming a pretty girdle effect. Waist No. 5580, sizes 14, 16, 18 and 20 years. The 16-year size requires 2 1-8 yards 44-inch material. Price, 15 cents. Two-piece skirt No. 5535, with high waistline and one-piece tunic, sizes 14, 16, 18 and 20 years. The 16-year size, about 1 1-4 yard wide, requires 3 yards 44-inch material. Price, 15 cents.

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THE MILLINERY LESSON.

Making a Wire Shape—Materials Required and Method of Working.

Materials—One ring of wire, strong cotton or mounting wire, nippers, tape measure, scissors.

Method of Working—1. Cut off a piece of wire the size of headline, plus one inch for furnings. Firmly fix into a circle by overlapping one inch and bind with strong cotton or wire.

2—Cut off piece of wire the size of circumference of brim, plus one inch, and fix firmly as before.

3—Measure off another piece of wire the size of the tip, plus two inches, and fix as before.

These are the three principal round wires, and may be made of thicker wire than the others.

4—Now measure length of center support wire. This will be from front of brim to base of crown; allow one-half inch for turnings, bend up sharply, measure depth of crown, bend again, measure across crown, bend downwards, measure for depth of crown at back, bend again, measure for width of brim at back, and bend once more, allowing one-half inch for trimmings.

5—Repeat same for side supports and for diagonal supports, nipping each support wire into position on headwire as each is cut off, to prevent displacing.

6—Place first bend of center support to center of headwire (always keeping joins of round wires at back.

7—Bring end over, pull tightly and press into place with nippers. Repeat with other end at back, and with all other support wires until all are fixed in place.

9—Measure for size of round divisional wire on brim by measuring from side to side, making length three times the width. Tie in position between brim and crown under support wires.

10—Measure and cut off two more, and tie into position between base of crown and tip and on top of crown inside crown.

(This method is for a crown and brim attached together, the crown of course not large but the same size as headline).

THE DRESSMAKING LESSON.

How to Make a Papier-Mache Bust Form for One's Own Dressmaking.

If you wish to do your own dressmaking you should fit up a bust form so that it will represent your own form exactly. To do this buy a good bust form for your own bust measure. Draft a tight waist to your measure and have some one fit it to you very tightly, tighter than you could possibly wear it. Fit it down about the hips about five inches below the waistline and be sure it is perfect at every point. Use very heavy lining material; sew hooks and eyes quite close together down the back. Place on bust form, and by taking off and on fill in all places where it does not fit the form, with layers of cotton put on very smoothly. Fill out until lining is hard to hook on. It should be as hard as possible, as you will wish to use it to fit your waists on.

By placing a petticoat on this form you can hang your skirts also, though for this the form must be on a standard. Use a board just the size and shape of the bottom of the form. Place four legs on this board a little longer than your skirt measure. To the bottom of these legs fasten another board large enough to prevent the form toppling over. Sew four tape loops to sides of bust form and put four brass-headed tacks in the edge of the top of standard, leaving just enough to slip tapes over. This will prevent form slipping off while you are working on it, yet you can, whenever you desire, remove it from the standard.

(Next week will begin a lesson on the actual work of making a gown.)

Willie—Pa, what are the zones?

Pa—Son, when I went to school they made me learn my geography. The zones are torrid, frigid, Panama canal zone and ozone.—New York Globe.

POULTRY.

TO CONSERVE EGGS.

Cold Storage or Canned Eggs May Help to Make Eggs Worth More in Summer and Less in Winter.

By Howard C. Kegley.

THE poultry world was astonished by the announcement that Prof. James Dryden, head of the poultry department of the Oregon Agricultural college, had succeeded in getting a hen of questionable parentage to lay 291 eggs in a year. Not content with astonishing the nation, however, the professor has just made a record of 303 eggs in a year.

Results Due to Feeding—However, Prof. Dryden's efforts still come a long way from solving the egg problem. To be sure, he has created a bunch of good layers, but the likelihood is that their laying tendencies are due more to their feed and care than to their breeding, for it is an admitted fact that the 291-egg biddy is a cross between at least two breeds of chickens. Then, too, it is an undeniable fact that the experiment stations can accomplish results which the average farmer or poultryman cannot get. There is a reason for this, too. The college is provided with an appropriation to back up any experiment or any set of experiments which it may desire to conduct, and it has the latest improved equipment and food stuffs with which to work, while the farmer, in a great many instances, has neither the capital nor the equipment, much less the necessary time to devote to taking observations and compiling data.

Cause of High Prices—Clubwomen rushed to the front this winter, when eggs were selling at from 50 to 70 cents per dozen, boycotted them, and beat the price down to 40 cents or less. That, however, did not increase the number of fresh eggs on the market—which same scarcity of fresh eggs was exactly the thing that sent the price soaring. The boycott merely meant that the wealthy classes deprived themselves of fresh eggs for a limited length of time in order to avoid paying high prices, and until enough new eggs dropped into the market and made it possible for the retailer to sell cheaper for the reason that he had enough to go around, rather than a short supply. It is the shortage that puts the premium on a commodity, always.

Uncle Sam recently investigated the high cost of eggs, thinking that there was an egg trust somewhere along the line, but he found that no such thing existed. After considerable research he discovered that the old hen herself was to blame for not having laid more eggs at the season when eggs were particularly in demand.

The college experimentalists can make the hen lay eggs most any time, by pampering, petting and feeding her to her complete satisfaction, but the average poultryman cannot do it, for he hasn't the time and the other things which go with experimenting. The average man can give his fowls a certain amount of attention, but he has to content himself with just about the number of eggs that biddy feels called upon to produce. Just as the pampered dairy cow yields up more milk than the muley that roams the fields without attention, so does the babied hen lay more eggs than the biddy that is thrown out into the middle of a big flock and compelled to root hog or die.

How Shall We Keep Eggs?—Unquestionably we need to breed up a race of hens that will be more prolific layers, but it looks at the present hour as though the thing for which there is the greatest need is conservation of eggs.

The mighty hen will lay more eggs than we want during the summer. Consequently the price of eggs is low in summer. One reason for this is because most poultrykeepers allow the males to run with the hens that are laying for market, and it is a well-known fact that a fertile egg will only remain fresh about 48 hours. Infertile eggs will not stale for at least two weeks, so it can readily be seen that the retailer has to sell fertile eggs quickly at almost any price, to avoid having them go stale on his hands, whereas if poultrymen delivered to him eggs which were not fertile he could ship them to centers where eggs were not so plentiful, and a better price could be obtained for all parties concerned. So we find that one of the first things to do in order to get better prices on the poultry farm during the months when eggs are cheap is to separate the males from the laying hens, and not only let the eggbuyer know that he is getting eggs which are not fertile, but get the neighbors to separate their roosters from the hens and sell the eggbuyer an infertile product, so that he may get enough of slow-to-stale stuff to justify him in shipping to a somewhat distant and more remunerative market.

Cold Storage Eggs Will Keep—That egg conservation must be the keynote of the campaign for cheaper eggs is proved by the fact that in recent weeks a Philadelphia woman who knows more about the keeping possibilities of cold storage poultry and eggs than perhaps any other woman or any man in the land—a woman who has made those commodities her life study for civic, state and government bodies—came out flatly with the declaration that we are rapidly approaching the point where we will begin putting up eggs in evaporated form. She expressed the belief that dried eggs as a staple commodity are not only probable, but are absolutely inevitable. Eastern firms have already conducted experiments which prove that eggs can easily be evaporated, powdered and prepared for use in the kitchen, and it would seem that the only thing which remains to be done is for some of our talented domestic economists to get busy and demonstrate the value of evaporated eggs as pertains to their use in the preparing of sundry viands for table consumption.

This same expert declares that she has made repeated tests with cold storage eggs, finding them ideal, where they have been chilled and kept at the proper temperature. The main trouble with cold storage eggs seems to be that the storage men do not understand the keeping quality of the eggs sufficiently well to make the storing of them a serious matter rather than a mere process of shoving the crates into a room cooled to a temperature which might well be expected to keep eggs from becoming stale within a reasonable length of time.

Indeed, this woman, who is a skilled domestic economist as well as an authority on fresh and cold storage eggs and poultry, comes forward with the statement that the staple eggs of the future, when eggs go soaring, will be frozen eggs. She says she has found by repeated tests that eggs can be [illegible] kept in excellent condition for at least one year. Furthermore, she claims, eggs of that class can successfully be used for baking as well as for table service.

Canned Eggs May Be Common—So, then, we stand face to face with the next thing under the sun—canned eggs. Now that we know it is possible to evaporate, pulverize or freeze eggs, and have them still fit for table use, it is not a far cry to pickled eggs, deviled eggs and bottled eggs in liquid form. To be sure, these things sound strange, but that is because eggs have heretofore been so common. Why not pickled eggs, or deviled eggs? We frequently go to the grocer and buy roast beef and milk in cans. Not until lately have we faced the need of commercializing the egg, but the time is about ripe for egg conservation, no doubt.

If prepared egg products will lower the price of eggs in the winter months, when eggs are extremely scarce, it will also raise the price of eggs in the summer months, for the egg preparers will prefer to put up their packs during the warm months when eggs are cheap, and the consequent rivalry between the preservers and the grocers will probably make summer prices for eggs much higher than they have been.

So get ready to see prepared eggs at the grocery store. You cannot get them there today, but the likelihood is that they will be on tap before the end of another year, for the high cost of living is going to make the conservation of eggs an absolute necessity.

TIPS TO TURKEY-RAISERS.

If insects are scarce you must feed meat scraps, because the birds cannot thrive without some animal food.

Keep the old shotgun handy. Crows and hawks are turkey lovers.

Don't forget that the wet kills young stock when they shoot the red at two months.

Mark your birds with a web punch. May save a lawsuit in the fall.

Don't forget to feed curds when poults show signs of swollen joints or rheumatism.

Don't allow feed to lie around to sour. Always turn them from the table a little hungry.

In taking on any new kinds of farming go slow—"Great oaks from little acorns" you know!

MOULDS FATAL TO POULTRY.

An Argument for Cleanliness and Care in Feeding Poultry.

By H. L. Kempster.

MOULDY litter in poultry-houses and mouldy feed are the cause of a large number of deaths among poultry and particularly among chicks. These moulds taken into the body of the fowl cause a disease known as aspergillosis. The disease is as fatal as the name sounds. Our scientists have neglected to find a shorter name for the disease, but among poultrymen chicks affected with the trouble are commonly spoken of as "lungers." Many times the disease is mistaken for white diarrhoea. The Missouri college of agriculture, in its investigation of poultry diseases, notes the following characteristic symptoms: The chick stands around in a drowsy manner and shows little desire to eat. The wings hang down, the breath is rapid and a white diarrhoea is present.

An affected chick will be found to have soft, yellow growths from the size of a pinhead to that of a pea, mainly in the lungs, but sometimes in the intestines and mesentery. These growths, clogging the air passages of the lungs, are directly responsible for the death of affected birds.

In mature fowls there are two forms of the disease. The mucous membrane lining the air sacs and tubes may be covered with a membranous formation which is soft and yellowish and has an offensive odor, or the post mortem will reveal white or yellowish nodules imbedded in the tissues of the lungs.

Early symptoms are that the bird is inactive, sleepy and if forced to run, will fall from exhaustion; breathing is rapid, appetite is diminished and more or less catarrh is present.

There is no cure for the trouble, but since it is caused by eating mouldy feed or by being permitted access to mouldy litter, it can be entirely prevented by not compelling fowls to eat mouldy food and by keeping them away from mouldy litter.

This is just one of the many poultry troubles that can be entirely avoided by feeding nothing but fresh, clean feed and keeping the pans and yards free from filth and moulds.

AIRING THE INCUBATOR.

One may air the eggs in an incubator in two ways. One method is to air some every day at the night turning, or in the morning, should the temperature be found a trifle high, and the other way is to turn the eggs slowly to inhale fresh air and to confine the real cooling to one or two periods when eggs have been incubated 15 and 17 days and to cool them down until the shells are actually cold. The best hatches are often the result of such cooling, especially in warm weather.

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SUMMER DISEASES OF POULTRY; HOW TO PREVENT AND CURE THEM.

How Weather Presents Many Difficulties to Poultry Raisers.

By Michael K. Boyer,
Poultry Editor of The Farm Journal.

(Copyright, 1914, by the Eugene McGuckin Co.)

Most summer diseases of poultry can be prevented or cured. Purity of food and sanitary quarters are the great preventives.

Inexperience and carelessness are the bane of the poultryman. Vermin and disease creep in and do untold harm.

Hot weather is hard on the fat fowls. Therefore, be careful not to overfeed in summer. You can study the diseases of chickens just like a doctor studies human physical weaknesses and apply remedies that will save hundreds of dollars. The following article is full of good suggestions.

THERE are diseases or ailments that are peculiar to hot weather, and which can, in a great measure, be prevented by strict cleanliness and the liberal use of disinfectants. Too much importance cannot be placed upon fresh air and sunlight. Both are germ killers and enemies of dampness. Pure food and clean, fresh water must be the order. In short, purity in food and sanitary quarters are of more value in preventing sickness than anything else.

The common forms of summer sickness are apoplexy caused by overfat; colds and snuffles, due to sweating while roosting in too hot quarters; baldness, white comb, scurvy, itch and feather diseases; liver troubles; limberneck and heat prostrations.

The inexperienced and the careless poultryman is very apt to be visited by all of these troubles, or at least a greater part of them.

Cleanliness and disinfectants will drive off vermin and kill disease germs, while fresh air and sunlight will purify the atmosphere and keep the house free from dampness.

Overfat is a condition that must be avoided as much as possible. The penalty is sudden death, due to apoplexy or vertigo. Lice and overfat is a combination that will destroy more fowls than any other sickness that can be named.

To keep vermin at bay, as stated, absolute cleanliness must be observed.

There must be a thorough housecleaning at least once a year—twice a year would be better, every spring and fall. Keep down the cobwebs, and with a good, stiff broom sweep the walls, ceiling and floor, removing all dust and foul litter. The nestboxes and the dropping boards should have special attention.

After all this is done, a good disinfectant should be used (nothing better than a coal-tar product, several of which are extensively advertised). This disinfectant should be sprayed or brushed in the cracks and crevices of the interior of the building, in the nestboxes and over the dropping boards and roosts. Do the work thoroughly.

In addition to this general cleaning the droppings should be gathered at least once a week (oftener would be better), and the litter in the pens renewed whenever it becomes foul. Many poultrymen renew the litter once a month.

Too much stress cannot be laid on the importance of plenty of fresh air in the poultry houses, both summer and winter. It is difficult to keep fowls from suffering from the heat, but much of the suffering can be alleviated.

Just at this writing (May 27th) we had very hot weather. The weatherman states it was the hottest day in May for 34 years. In our pens we had a number of overfat hens. Some hens in a flock will become overfat, no matter what precaution is taken. Nine of the hens died. There was nothing that ailed them, but the heat was too much for them. It was the penalty of overfat.

Apoplexy and vertigo are, practically, twins. When a hen has vertigo it staggers and becomes helpless. The blood rushes to the head. If taken in time, and the head bathed in cold water, it is possible to relieve the victim. If neglected, apoplexy follows.

Apoplexy and vertigo are the results of the blood rushing to the head, caused by being too fat, and the heart naturally becomes weak. There is an heredity tendency, but violent exercise by being chased, or intense heat, or indigestion, or straining, especially in laying hens, will cause it. The blood rushes to the head, the fowl becomes dizzy, staggers as if drunk, or runs about in circles. If under these circumstances the amount of blood in the head be increased, the brain suspends its activity and the fowl falls senseless.

In cases of pure vertigo, bleeding the bird from a vein in the under side of a wing will give relief. Two drops of croton oil given in the mouth will also greatly assist. The bird should then be kept in a coop alone until recovered.

In cases of apoplexy there is no cure.

Summer colds and snuffles are induced where hens are overcrowded on the roost. They will huddle closely together and "sweat" when coming off the roost. This is especially so when the fowls are compelled to roost in hot quarters. The case is very similar to colds in the head with human beings. I know of nothing better than aconite. Daily mix the tincture with the drinking water, at the rate of a teaspoonful to every three gallons of drinking water, stirring up the water considerably so the aconite will be evenly distributed.

Baldness, white comb, scurvy, itch and feather diseases really come under one head. Where the feathers on the back of hens are worn off it is generally due to the wear of the feet of the males. Where this is not the case, depluming mites may be at work. About the best treatment for this is to use a good sheep dip, soaking the hens well in it. This should be done on a warm day. In dipping fowls be sure to keep the mouth and nostrils free of the dip or they may strangle.

Liver troubles assert themselves especially in hot weather. At first the fowl becomes lame and then it "goes light." The liver wastes away, becoming small and pale, the bird is depressed, drowsy, the plumage loses its luster, the evacuations are of a bilious order, ending in a black or blood-stained condition.

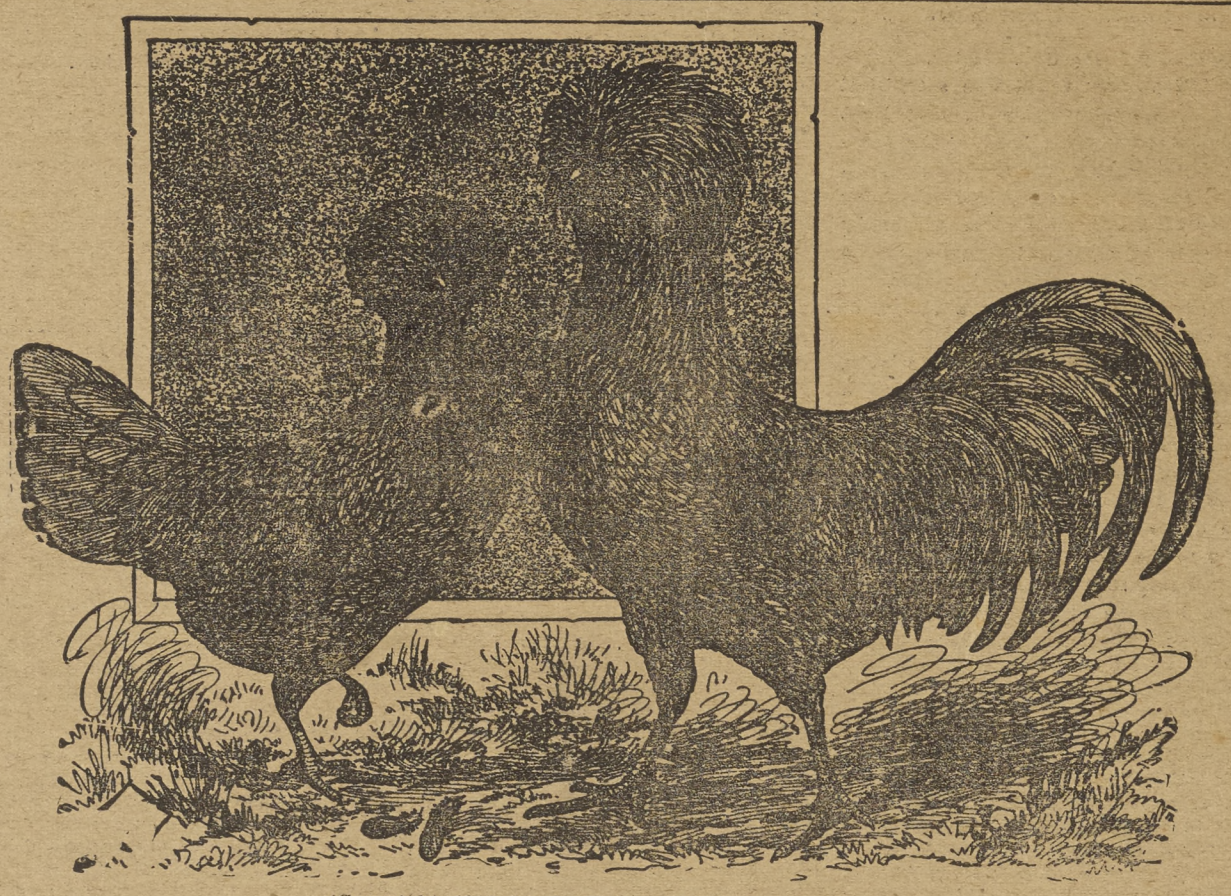
Such cases are hopeless. There is nothing that can restore the liver.

Limberneck is a trouble that comes from eating decaying flesh. There probably may be a rat, or a cat, or a rabbit that died and is decayed when the poultry discovers it. This gives ptomaine poisoning.

Early treatment is to clean out the rotting mass in the intestines by use of epsom salts, and then add sulpho-carbolate zinc to the drinking water for a week. Use a half teaspoonful of salts in a little water and 10 grains of sulpho-carbolate zinc to each quart of drinking water. It will be time well spent every week to make a tour of the range of the fowls to detect, if possible, any decayed vegetable matter, which should at once be either buried deeply or cremated.

Heat prostrations are more common with fowls that have been allowed to accumulate too much fat. Avoid feeding corn or other heat-producing foods until colder weather sets in. If taken in time, holding the head of the patient under a cool stream of water will give quick relief. It should then be placed in a quiet, cool place for several days.

In conclusion, I might say that the best precautions are: (1) Avoiding overfat; (2) avoiding too heating food; (3) having open-front houses so that the pure, cool air can enter, especially at night; (4) keeping the fowls quiet, so they will not overexert themselves, and (5) feeding nothing but the purest grains, avoiding meat scrap that has been tainted.



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Bearded Golden Polish.

This variety is more than 100 years old. It is supposed to have orginated in Italy and was bred to a degree of perfection in the Netherlands, from where it spread over Western Europe and to America. The name Polish came from the first belief that they originated in Poland.

On account of lacking certain economic qualities they have not become widely popular. The White Crested Blacks were the first variety, but Dutch breeders developed the beautiful Silver and Golden Polish, some with crests and some with both crests and beards, the type shown herewith being of the crested and bearded variety. Their plumage is geenrally golden tan in color, each feather edged or laced with brilliant black.

They are very gentle and thrive well in confinement in favorable climates where the soil is dry. The hens are excellent layers of large, white-shelled eggs, and produce a number of them; so that for a home flock that will be a delight to the eye as well as a producer for the table, the Golden Polish will be found both pleasurable and profitable.

The hens are non-sitters, so that their eggs must be hatched by other hens or by artificial means. The chicks are rather delicate, but if kept dry and intelligently fed will thrive and grow in the most satisfactory manner. They should never be reared in large, open spaces, as their crests prevent them from seeing the swooping hawk in time to avoid capture.

In size these fowls compare with the Leghorn and weigh about the same. They are very fine boned and carry a larger proportion of meat in comparison to offal than most other breeds. The legs are blue or, in old specimens, white; the skin is white, and each fowl has a round protuberance on its skull, from which the feathers of the crest grow.

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